DOCUMENT RESUME

ED 089 125 CE 001 196

TITLE Training for Agriculture: Annual Review of Selected Developments.
INSTITUTION United Nations Food and Agriculture Organization, Rome (Italy).
PUB DATE 73
NOTE 80p.

EDRS PRICE MF-$0.75 HC-$4.20 PLUS POSTAGE
DESCRIPTORS *Agricultural Education; *Agriculture; Communication Skills; *Developing Nations; Educational Finance; Futures (of Society); Manpower Development; National Programs; Population Education; Rural Areas; *Rural Development; Rural Education; *Rural Extension; Training; Youth Clubs

ABSTRACT

The topics covered by review articles are: Training for Rural Development (with special reference to Chile); Field Training--Theory into Practice (for women extension workers in Malaysia); A New Look is Needed for Extension (Latin America); 4-D Rural Youth Clubs in Dahomey; Sociological Aspects of Rural Training; Population Education in the Developing Countries, The Role of Rural Extension Services; Some Observations on Middle-Level Agricultural Education; The Future Outlook for Agricultural Education Needs in Industrialized Countries; Training in Communication for Rural Development Personnel; The Financing of Agricultural Education; Traditional Agriculture and Extension; Some Reflections (Ethiopia and Yemen); and Relationship Between National Agricultural Policies and Agricultural Education and Training. (SA)

TRAINING FOR AGRICULTURE

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS

BEST COPY AVAILABLE

TRAINING FOR AGRICULTURE

Annual Review of Selected Developments

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS
Rome, 1973

TRAINING FOR AGRICULTURE

Annual Review of Selected Developments

This Review is a medium for the dissemination of information and views on agricultural education and training, extension and related subjects, to the United Nations, FAO Member Governments, FAO National Committees, national and international institutions and field workers. It is issued annually in English, French and Spanish.

Readers requiring more detailed information concerning the contents of the Review should write to: The Editor, "Training for Agriculture", Agricultural Education and Training Service, Human Resources and Institutions Division, FAO, Via delle Terme di Caracalla, 00100 Rome, Italy.

The opinions expressed in this document are the personal views of the individual authors and do not necessarily represent those of FAO.

CONTENTS

	Page
TRAINING FOR RURAL DEVELOPMENT by Solon Barraclough	1
FIELD TRAINING - THEORY INTO PRACTICE by Barbara M. Purvis	9
A NEW LOOK IS NEEDED FOR EXTENSION by Armando Samper	16
4-D RURAL YOUTH CLUBS IN DAHOMEY by Antonio Ainé	19
SOCIOLOGICAL ASPECTS OF RURAL TRAINING by John Higgs	25
POPULATION EDUCATION IN THE DEVELOPING COUNTRIES THE ROLE OF RURAL EXTENSION SERVICES by Warren L. Schmidt	29
SOME OBSERVATIONS ON MIDDLE-LEVEL AGRICULTURAL EDUCATION by E.G. Mortimer	39
THE FUTURE OUTLOOK FOR AGRICULTURAL EDUCATION NEEDS IN INDUSTRIALIZED COUNTRIES by A. Simantov	42
TRAINING IN COMMUNICATION FOR RURAL DEVELOPMENT PERSONNEL by Juan Díaz Bordenave	46
THE FINANCING OF AGRICULTURAL EDUCATION by A.G. Apodaca	55
TRADITIONAL AGRICULTURE AND EXTENSION: SOME REFLECTIONS by S.Z. Mocsarski	59
RELATIONSHIP BETWEEN NATIONAL AGRICULTURAL POLICIES AND AGRICULTURAL EDUCATION AND TRAINING by G. Cameron Clark	61
NOTES AND COMMENTS	67

LIST OF CONTRIBUTORS

1. Solon Barraclough	Project Manager, UNDP/FAO Regional Project for Agrarian Reform and Rural Development, Santiago, Chile
2. Barbara M. Purvis	FAO Home Economist Kuala Lumpur, Malaysia
3. Armando Samper	Assistant Director-General of FAO and Regional Representative for Latin America, Santiago, Chile.
4. Antonio Aimé	FAO Agricultural Extension Officer formerly in Dahomey.
5. John Higgs	Chief, Agricultural Education and Training Service, FAO, Rome, Italy.
6. Warren E. Schmidt	Senior Officer, Population Education, Agricultural Education and Training Service, FAO, Rome, Italy.
7. R.G. Mortimer	Director of Studies, Head of Agriculture, Harper Adams Agricultural College Newport, Shropshire, England.
8. A. Simantov	Director, Directorate for Agriculture and Food, OECD, Paris 16e, France.
9. Juan Días Bordenave	Communicator, Inter-American Institute of Agricultural Sciences of the OAS, Rio de Janeiro, Brazil.
10. A.G. Apodaca	Agricultural Education Officer Investment Centre, Development Department FAO, Rome, Italy.
11. E.E. Hoogerwerf	FAO Rural Institutions Officer formerly in Highlands Farm Development Project Taiz, Yemen Arab Republic.
12. G. Cameron Clark	Regional Rural Institutions Officer FAO Regional Office for Asia and the Far East, Bangkok, Thailand

TRAINING FOR RURAL DEVELOPMENT

by

Solon Barraclough

Everyone agrees that rural development requires education and technical assistance for rural people both as a means of development and as one of the goals of the process. Development texts and plans usually mention the importance of agricultural education, training and extension programmes. The international agencies all insist upon the need for training. FAO's Human Resources and Institutions Division makes training and extension one of its main functions. Agricultural projects financed by the World Bank and other international agencies usually carry a training component. With so much rhetoric and so many resources dedicated to training, it is surprising that there have been few serious discussions of how training programmes should be organised, what methodologies should be followed and what their contents should be.

Superficially the rural training problem appears to be relatively simple. Rural development, according to both conventional wisdom and various official UN and government declarations, means more than just the growth of agricultural production. It also implies a more equal distribution of income and a greater participation of rural people in economic and political decisions and in the national society in general. Relatively unproductive agricultural technologies must be replaced by more efficient ones based on modern science. New irrigation and transport systems must be constructed. Agro-industrial complexes have to be created for the efficient processing and marketing of agricultural products. Small farmers and landless workers who have been living at near-subsistence levels must become more productive using more inputs and consumer goods and services originating in non-agricultural sectors of the economy.

All of these changes imply training at every level. To many people this merely means that the agricultural schools and universities must improve their curricula and increase their output of professionals and technicians so that there are sufficient agronomists, administrators and engineers, accountants, cooperative managers and marketing specialists. Poor and often illiterate peasants and farm workers have to be trained to make rational management decisions and to use modern agricultural techniques. Their sons must be taught how to use and repair farm machinery. In essence, the training problem appears to superficial observers to be one of simply transferring knowledge and techniques already available in the industrialised countries.

Numerous development planners and politicians are even more sanguine in their expectations of training programmes. They recognise that peasants are often not anxious to adopt new techniques or to change their traditional ways of life in order to "develop". Moreover, technicians and professionals drawn from urban middle-class groups and from families of the larger landowners are not always enthusiastic about carrying out development plans that prejudice their relative status in rural society. The development planners reason that all of these people have to be motivated. Somebody has to explain to them why the kind of development that the particular government in power advocates is really good for them. This is often seen as a function of training.

Unfortunately, the problem is much more complex than indicated by this caricature of the aims of rural training. The expectations just summarised about the results of training are highly unrealistic in any circumstances. In addition, the methods used in rural training programmes are frequently inadequate even to attain much more modest objectives.

Training Programmes must have Ideological Content

A Manichean vision of the world, that most of us to some extent share, leads us to regard education and training, like development itself, as good things. On the other hand, many of the common concomitants of economic growth such as increased income disparities and unemployment, greater pollution, mounting alienation from one's work and community and the continued exploitation of man by man, are regarded as bad. We forget that development is a complex historical process full of contradictions and conflicts. Even the most unpretentious training programme such as the preparation of tractor-drivers, for example, carries with it certain assumptions about the society in which the tractor driver will function. There is no possibility of having training programmes devoid of ideological content. When these programmes deal not only with strictly technical skills but also with institutional organisation, all of the contradictions in the development process tend to become sharply focused within the training programme. To think that rural development training can be neutral or that it can in itself resolve the social conflicts that have not been resolved in the political sphere is, of course, pure illusion. Any training programme must either reflect the social contradictions and conflicts of the society in which it takes place or else fulfil an implicit or explicit propaganda role for a particular view of the society. Any other expectation is either naïve or hypocritical.

Educators and laymen alike tend to expect too much from training. The old liberal assumption that education alone can be instrumental in changing society by providing everyone with equal opportunities and by implanting new values are being questioned everywhere. A person's values and intellectual and physical capacities are a product of his whole life experience acting upon his original biological endowment. Anyone's life experience, however, is determined by the society in which he lives and, within each society, by the social class into which he was born. At best, formal education or training programmes can have only a marginal influence. It would be absurd to think that giving peasants in Africa, Latin America or Asia the same formal education as farmers in Europe or the United States would, in some mysterious way, give them the same opportunities and values as farmers in these industrialised countries. What is not so obvious but equally true is that training peasants in poor countries may give them no additional opportunities whatsoever unless the rest of their society is also changing in a way that makes their training useful.

By the same token, it is futile to expect that training courses explaining a government's development plans and objectives can easily motivate peasants to carry out these plans. This kind of training is often called social and political education, or "concientización" in Latin America. It is usually labelled propaganda by its critics. Under whatever name, it has little effect unless it is based on a thorough understanding of the trainees' values, aspirations and immediate problems. Even when it apparently provides answers to many of the real concerns of important rural groups, such training can only be marginal and complementary to past experience and to other forms of political, social and economic mobilisation in motivating people towards development efforts. Those who would ascribe a more fundamental and determinant role to formal training in changing either values or society should recall that the church has been teaching people not to sin for some 2000 years without any notable results.

While training programmes cannot play a determinant role in changing rural society, they can nonetheless play an important complementary one. That they have often failed to do so is in part caused by another misconception. This is that training consists of the mere transmission of skills and knowledge. This concept of training is, at best, useless.

Knowledge transmitted mechanically becomes inert knowledge that could just as well be programmed for a computer, while skills become mechanical ones that could be as well performed by a machine. To paraphrase Alfred North Whitehead, training is the acquisition of the art of utilising knowledge and skills. The mere mechanical transmission of knowledge and skills without at the same time imparting the art of utilising them is a waste of time and effort. Effective training is not a process of cramming information into the heads of trainees, but consists of a real interaction between students and teachers. Who will train the trainers? In a democratic society the answer to Karl Mannheim's conundrum has, in the final analysis, to be the trainees - and vice versa. Any other reply presupposes an élite priesthood with metaphysical access to ultimate truth.

A second reason that training programmes have been less than satisfactory is that frequently they are not based upon an adequate analysis of what kind of training is really demanded or required by the trainees. Specialists are prepared for jobs which do not exist. Farmers are taught management methods that are not practical. Peasant women are taught how to prepare nutritious meals with foodstuffs they cannot possibly buy. These training programmes simply have no relation with either actual or foreseeable real needs of the community. In the long run, they may contribute to development by creating frustrated underemployed technicians, peasants and workers who will support radical change, but in the short run, they are counterproductive.

A third error has been to isolate training from other development programmes. Training is seen as an objective in itself. In reality, training and technical assistance should be complementary to and closely integrated with programmes of production, investment and institutional change. Since national planning is necessarily rudimentary in poor agrarian countries, this integration must take place for the most part at the local level.

Finally, agricultural training programmes are often planned from the top down, instead of from the bottom up. The peasants and farm workers are given no participation except as passive students. Training and technical assistance are provided on the basis of what high-level bureaucrats and administrators believe to be the government's and the rural population's needs. They do not take into account what peasants and farm workers feel to be their needs nor do they even incorporate the knowledge of local problems held by local government officials. Moreover, centrally planned and directed programmes in non-industrialized countries can never mobilise enough resources to be truly effective. It is practically impossible for the central government in a poor country to find and deliver sufficient funds, instructors and equipment to meet local training needs adequately. A central government capable of administering a large national agricultural training programme would have to possess a level or organization sufficient to qualify it as being "developed". A successful agricultural training programme must meet local needs and use locally available resources. This means the programme has to be planned first at the level of the local community.

Conventional Training and Extension Programmes

The conventional approach to rural training in Latin America and other regions has been patterned after the highly successful agricultural extension and vocational training programmes developed in the United States and some European countries. These models were uncritically adopted by colonial administrators, by international aid programmes, by large multi-national corperations and by Latin American government officials who had studied agriculture in the industrialised countries or had visited them and were favourably impressed. These programmes were particularly successful in their countries of origin because they were created to answer the problems and aspirations of numerous small farmers who already had access to land, social status, political power, alternative employment and the possibilities for economic advancement. They were, however, relative failures in societies where large rural groups did not enjoy these advantages. This does not imply that the approach is inherently wrong. It simply means that a training organisation and methodology that was well adapted to the social system in which it originated may become largely irrelevant in other social systems unless a great deal of modification was made

in its application. In fact, it was sometimes prejudicial to real development and contributed to a tightening of the control and exploitation of peasants and farm workers by an urban or colonial élite. There is a great deal to learn about training techniques and methodologies from the experiences of industrialised countries. The problem is to interpret these lessons correctly and adapt them to the realities and rural development strategies of other societies in a way that is consistent with the goals of the United Nations and FAO.

The conventional approach of the industrialised societies is inadequate for development training in traditional rural social systems. It is even less relevant when these societies are initiating rapid institutional changes such as agrarian reforms. This was particularly evident in Chile when the reformist Christian Democratic administration commenced its agrarian reform in 1965. With some exceptions, the extension personnel and agricultural vocational school faculties were unsympathetic or actually hostile to the reform. The educational bureaucracies were reluctant to change their methods and contents in order to produce graduates more qualified for working in the reform context. Extension agents were, for the most part, horrified by the disorder and inefficiencies accompanying the reform. Previously, training and technical assistance had at least met some of the real needs of the relatively small group of larger commercial farmers who had sufficient land, power and other resources to employ new technology. Once a process of accelerated institutional change is underway, however, the conventional approach to training becomes completely disfunctional. It can no longer serve the old agricultural élite which is disappearing, nor can it serve the new agricultural structure because it has not yet taken shape. A fresh approach is obviously required.

The National Manpower Planning Approach

The response of the development planners, and of the international agencies after a discreet time-lag, when confronted with rapid agrarian changes and grandiose development plans should have been predictable. It was "national manpower planning" based on the experience of training industrial workers and armies in war economies during two world wars and the post war reconstruction of Europe and Japan. The agricultural development training problem therefore became one of first, making a manpower plan for the rural sector, secondly, of estimating training needs and thirdly, of creating an administrative bureaucracy to carry out the necessary training components of the plan.

But weaknesses of the manpower planning approach are easily seen from the Chilean experience after 1966. With the adoption of a new agrarian reform law, the Government decided to begin a national programme of training settlement officers, agrarian reform administrators, accountants and the like. This national training programme was formally entrusted to the Chilean Agrarian Reform Training and Research Institute (ICIRA). In reality, however, there were some 26 public and semi-public institutions engaged in agricultural training of one type or another, each with its own programme. Several hundred agrarian reform technicians passed through short courses given by ICIRA that lasted from a week to two months. Of course, they were not really trained. They were merely exposed to some of the tasks that they might be called upon to perform. As it was impossible to foresee most of the actual problems these officials would be confronted with once they assumed responsibilities in the field, the training was necessarily somewhat abstract and general. Moreover, because of internal conflicts, the government was not able to define how the agrarian reform units should be organised after the transition period, or what future land tenure and agricultural policies would be. This made it almost impossible to give valid operational training to farm managers, accountants and technicians, as such training has to be related to the operational guidelines within which they would have to work.

Two years later when it became apparent that thousands of campesinos and campesino leaders would also have to be trained, these problems became even more complicated. The Government's desire to use training as a vehicle for political indoctrination made it

somewhat doubtful that ICIRA, a UN-supported independent institute, would be the most adequate training institution. The opposition parties were even more suspicious because the institute was largely financed by the Government and its national staff was responsible for it. On top of this, it was physically impossible for a small institute with about 50 professionals to organise effective training courses for more than twenty thousand agrarian reform beneficiaries. The lack of political definition within the Government about the nature of the new agrarian structure it wished to create made training the campesino leaders even more problematic than training the technicians.

At the same time, the technical training of reform beneficiaries in livestock management, tractor care and mechanics, horticulture and the like, was entrusted to a different institution, INACAP, which was a national training institute, initially supported by the ILO, that had been responsible for preparing factory technicians and industrial skilled workers. This institute set up branches in rural areas throughout the country and initiated technical training courses. Each course was good in itself but had little relation to the real organizational and farm management problems most of the agrarian reform beneficiaries were encountering. The inevitable result was considerable wasted effort with many of the trainees either returning to jobs on their units in which their training was of little use, or of using the training as a possibility to escape from agriculture to more attractive urban employment or to obtain positions in the agricultural bureaucracy. In any event, neither ICIRA nor INACAP had sufficient resources to make much of a dent in the training programme which had been indicated by the hypothetical manpower plan. Meanwhile, the universities, the vocational schools and the agricultural extension service continued to operate almost as if no agrarian reform was taking place.

A Strategy for Rural Development Training in Revolutionary Situations

Faced with the failure of both the conventional and national planning approaches to training for rural development, a small group of Chilean and FAO professionals have been attempting to devise a more realistic training strategy. What follows is a brief summary of some of the tentative conclusions.

In the first place, the proposed strategy assumes, as do recent FAO conference resolutions, that rural development implies greater campesino participation and a much more egalitarian distribution of income and social services, as well as increasing agricultural production and productivity. The new approach calls for a radical change in the traditional relationships between teachers and students. Campesino participation is interpreted to mean that they participate not only in economic and political decisions, but also in planning and executing training programmes. Traditionally, government agricultural officials and specialists have determined what should be taught, and then instructed the campesinos as to how they should organise their cooperatives, how they should manage their farms and how they should perform various tasks such as caring for crops, livestock or machinery. The new approach, on the contrary, assumes that each campesino group should have a major responsibility in determining, together with the state-employed professionals and technicians, what its members should be taught and how.

The proposed approach recognises the class nature of rural society. The larger commercial farmers do not have the same interests as do the landless labourers, the small producers and the rural unemployed. Moreover, there are numerous sub-groups within each of these broader rural classes with divergent interests and distinctive problems. The training needs of each group are to some extent unique. In addition, the state bureaucracy itself forms a separate social class in the sense that its social origins, its career opportunities and its relation to the means of production are not the same as those of the campesinos. It would be naïve to expect that the bureaucracy would be indifferent of its own interests in training programmes or in any of its other activities. The new training strategy takes into account the problems, demands and objectives of each of these different groups.

Rural development training programmes should be focused primarily on problems of agricultural production, marketing, processing and economic organization. Both the State and the campesinos are highly concerned with agricultural production and organizational problems, the former because production goals must be met in order for national economic plans to be realized, and the latter because it is the basis of their survival. While landless labourers, independent small farmers, large commercial farmers, members of land reform cooperatives and State bureaucrats all have different roles and incentives with many conflicting interests in the production process, agricultural production is basic for each. Both the technical problems and the economic and organizational problems related to production and distribution are of paramount importance to all of them. Economic planning of production units, such as farm management planning, provides a common interest in training programmes. This is not to say that training should not also include subjects such as home economics, nutrition, literacy and social programmes. But, inevitably, any determination of training priorities by campesinos and government functionaries will tend to give first priority to production and organizational problems.

As the national government in a poor country can have neither the resources nor the necessary information for administrative capacities to formulate or execute a realistic national training programme, the planning and programming of training and technical assistance must necessarily be decentralized geographically. Within a broad national framework of goals and methods, training programmes should originate at the smallest administrative units in the country, such as the county or township - in Chile, the comuna. A national programme can only evolve slowly after local programmes have been formulated and then consolidated at the provincial or zonal level. A national programme is the last step, not the first one. Initially, about all that can be done at the national level is to set some general guidelines establishing the methodology for training programmes at the local level, and to support local programmes with didactic materials and logistically to the extent possible.

A question immediately arises: If there is not a unified national training programme, how can the government implement its national rural development plan? The answer is that the plan must be implemented politically and economically through nationally planned programmes and projects guiding production, investment, marketing and political mobilization. Training can only be complementary to these other aspects of the development plan. It is difficult enough to initiate any sort of national planning even in the strictly economic sphere. In the early phases of rapid institutional change these planning difficulties are merely compounded and accentuated if an attempt is made at the same time to synchronize training programmes at the national level with economic and political programmes. This synchronization must come at the local level taking into account the way in which the national development plan has actually worked out in each region and community. The objective should not merely be to make consistent development and training goals on paper in the national capital, but to integrate development and training programmes in practice for every project, farm, factory, cooperative union and other rural organization.

Even at the local level, training cannot be considered as being separate from the other elements of rural development plans and programmes. Instead, it must be closely integrated with them. There are simply not enough officials and professionals to serve as instructors for training programmes apart from those of production, investments, processing, seed control, marketing and the like. Every professional and technician in the State bureaucracy and in agro-industries should also be a teacher, and instructors should also be found from among the campesinos who have qualifications. In other words, all technical, professional and other skilled persons in each locality should be integrated into the training programme. There is no possibility of having an adequate corps of professionals dedicated solely to training and technical assistance while others who are technically qualified continue to carry on their bureaucratic and other tasks with no concern for training activities. The agricultural bureaucracy's work methods and organization must be rationalized so that training is a truly complementary activity to production, processing, marketing and institution building. The development plan for the locality must be adequately understood and supported. To be sure, there has to be someone

in each locality or district with specific responsibility for coordinating training and technical assistance, but this is very different from trying to have an independent national training programme disaggregated at the district level.

In practice, the first step in the proposed strategy would be an inventory of resources and production plans in each locality, followed by an analysis of the principal training requirements connected with these plans. This inventory should be made jointly by the government personnel and the peasants and agricultural workers. The analysis of problems and their implication for training needs, however, should be carried out in the first instance separately by the government bureaucrats and by the members of different peasant organizations, farm units, cooperatives and agricultural worker unions. This is because rural development problems are going to appear very differently to the various groups involved. Moreover, large farmers and government officials will tend to dominate the less-educated campesinos in joint meetings. Once the different rural groups have had a chance to analyze the data separately, however, they must decide together with the bureaucracy what the principal problems are and what training programmes are required in order to help to overcome them. This dialogue with the bureaucracy is facilitated when these campesino groups have a local organization bringing them together to discuss and act on common problems, such as the communal campesino councils in Chile.

The second step is an analysis of the available technical, professional and material resources that could be used for training in the community and of how they are presently employed. On the basis of this information, it becomes feasible to formulate an effective programme. The use of available resources must be rationalized in each locality in order to optimize their use. The tendency in most poor countries is for the agrarian bureaucracy to become immersed in purely bureaucratic tasks and to spend most of its time in government offices located in the larger towns and cities. For example, in Chile, nearly nine-tenths of the agricultural technicians and professionals have been concentrated in the national and provincial capitals with inadequate transport or incentives to spend much of their time in the field. The training programme should result in a great deal more of their time being spent on technical assistance and training with the rural groups that need their help. Again, this analysis of training resources should, in the first instance, be made independently by the campesino groups and by the bureaucrats, and then jointly.

The next step is the formulation of the training programme for the locality. If new investments are being contemplated in dairy farms, for example, there will be a need to train dairy farm managers and a variety of specialized workers. If new tractors are being planned for the area, or if they have already arrived, there will be a need to train tractor drivers and mechanics from the organizations that will control and use them. If the government's plans call for the establishment of a processing plant, the necessary workers and technicians will have to be trained to operate it. If there are production cooperatives in the area, cooperative personnel must receive the necessary specialized training for their functions within the organization. The point is that training should be closely related with the real problems in each area or district. The need for the training should be understood by the trainees and the contents agreed upon with them.

The fourth step is execution of the programme. This requires the organization of courses, the programming of technical assistance, the provision of didactic materials, the location of classrooms, etc. This again can be best done at the local level by the local government personnel and the campesino organizations. The national and zonal training super-structures can help in locating resources and materials that are not available in the community. But the bulk of the training material and personnel must be found locally if training is to be truly massive and effective.

The training and technical assistance programmes will, of course, use a large variety of instruments and didactic methods. Conventional extension techniques must be employed to the fullest extent possible. Short courses are useful for many types of training, such as the preparation of mechanics or accountants and the teaching of specific agricultural techniques. Demonstration plots and field days are another useful technique. To the

extent feasible, audio-visual materials and modern mass communication methods can be used to supplement these more conventional techniques. Movie films and closed-circuit television, for example, could play a valuable supporting role. Television offers the additional advantage of making interaction possible between peasant groups and instructors through questions and actual demonstrations that can be recorded and incorporated into the next televised class. There are, however, few countries with the resources required to use these more sophisticated communication technologies on a large scale during the initial stages of a massive rural training programme. With FAO/UNDP aid, experiments of this nature are being undertaken in Chile and there may be interesting results to report soon.

In the long run, it will be necessary for agricultural professionals and technicians to be recruited from among peasants and farm workers themselves and be in large measure responsible to them in their work. Initially, this is difficult because of the low level of education most campesinos have attained. But training programmes should begin immediately to create mechanisms for the sons of campesinos to receive more education and specialized training so that gradually the agricultural bureaucracy will be staffed by personnel whose social origins were in the small farmer and agricultural labourer classes. If this does not occur, there will always be a wide social gap between the agricultural professionals, technicians and bureaucrats on the one hand, and the peasants and farm workers on the other. In any event, some of the training could be done by campesinos from the very beginning as there will be some peasants and workers who already have skills and experiences of value to others.

In the short run, in addition to using some skilled campesinos as instructors, part of the problem of the low level of campesino education could be overcome by the establishment of agricultural training centres where agricultural workers, cooperative members and the like could receive intensive and very practical training near their homes. This training should be closely related to the work they are doing on their own farm units. It should combine formal instruction with actual practice, with the major emphasis on the latter. For instance, the practice could consist both of work on relatively well-managed demonstration farms and of supervised work in their own farm units. Again, such training centres must be created with local cooperation and initiative, although, of course, with some support from outside the locality.

The final step in the proposed strategy is one of continuous control and evaluation. Without this there is no way of knowing whether the programme is fulfilling its original objectives or is adjusting adequately to the lessons of experience and to changing needs. The national and provincial training authorities, together with representatives of the campesino organizations, would have the important function of establishing the criteria for this evaluation and control. But again, actual implementation should be done by the local government officials and the peasants' and farm workers' local organizations.

The "revolutionary strategy" outlined above is in many ways an extremely conservative one because it draws on past experience in agricultural training for many years and in many countries. Nonetheless, if the participation of the trainees and geographical decentralization of training programmes proposed here are carried to their logical conclusions, the implications are very revolutionary indeed.

FIELD TRAINING - THEORY INTO PRACTICE

by

Barbara M. Purvis

Training - its planning, organization and evaluation - occupies many who are involved in development work. How to organise field training is a particularly thorny problem. Perhaps only the nursing profession has solved it satisfactorily by enabling the potential nurse from her earliest days to be associated with her clientele through the close links which exist between training school and hospital. But at least the nurse has the advantage of a captive audience!

In the training of a woman extension worker, however, it must be remembered that she is most effective in her contact with her audience when she can meet them informally, possibly in their own homes. How to train her to do this is the problem - a model village would defeat its own purpose. She must go out and meet the people and their problems on their own territory. She must therefore, at some stage, undergo a period of training in the field in conditions which simulate to the maximum possible extent those in which she will ultimately be working.

In planning field training, the problems usually include:

A - Choice of Area - where the people will accept and respond to the efforts of a trainee; and one which is reasonably similar climatically, culturally, etc. to those in which she will ultimately work.

B - Guidance and Supervision - the trainee and her supervisors must know what she is expected to achieve and her achievements must to some extent be measurable; the supervisor must not only be able to introduce her to the locality and encourage her in her first attempts, but also reassure the villagers as to her purpose in the area. The supervisor must be suitably trained and have adequate time, interest, transport, etc. to undertake these responsibilities.

C - Financing the Trainee - in pre-service training, cognisance must be taken of the costs to be incurred by the trainee when living away from home and from her training school.

Of these factors, guidance and supervision are probably the most important in relation to the value of the experience to the trainee. They are also the most difficult to arrange. A potential teacher will be surrounded during teaching practice by experienced teachers. By contrast, the trainee extension worker may be isolated from professional contact for several consecutive days. A system must be devised to provide her with advice when she needs it and help prevent situations arising which would nullify the value of the whole of the rest of her field experience.

Practical field training is no innovation. The following description is only one example of how it may be organized and shows the use of a device, a guidebook for the trainee, designed to assist the process and avoid some of the problems indicated above.

Nature of the Programme for which Workers were being Trained

The Malaysian Ministry of National & Rural Development (MN&RD) conducts an adult education programme throughout the rural areas of West Malaysia. This includes small, short, formal classes, usually in the form of demonstrations, of aspects of home-making given by rural girls after undergoing a three-month training course in the home-making skills. Over 3,000 girls have been trained but only about 1,000 are used for the classes on a part-time semi-voluntary basis. In 1969, a programme, funded by the Australian Freedom from Hunger Campaign (FFHC) was started to provide, amongst other activities, the training of a pilot group of supervisors for the 1,000 demonstrators 1/.

Job responsibilities for a supervisor were defined. In particular, she was to work in a given area not only with the demonstrators but also with others who had been given training. She was to help them follow a "code of practices" through which they could all set a good example in their villages by practising in their own homes the skills they had been taught. She was expected to work with the demonstrators in making their classes better suited to the needs of the audience and to guide them in the home visits for follow-up activities and in collaboration with farmers' associations.

To equip her for these duties the following training programme was planned. Each potential supervisor had undergone the basic three-month course, had successful demonstrating experience, was of superior educational standard and fulfilled various other criteria necessary for her effectiveness. The programme was a combination of formal training in skills as they were required, and field experience for practising and consolidating these skills.

Phase	Location, Duration and Nature of Training
I	Ministry's Training Centre: 5 months "Advanced" home economics with emphasis on nutrition, needlecrafts for income-raising, management of resources, etc.
II	Agricultural Training Centre: 6 weeks Introduction to elementary agriculture and extension education.
III	Farmers' Associations: 6 months Guided, supervised attachment as a field-level home extension worker.
IV	Ministry's Training Centre: 6 weeks Specialised training in supervisory duties.
V	In area to which posted as supervisor: 6 months Probationary period under HQ supervision.
VI	Ministry's Training Centre: 4 weeks In-service training - evaluating previous 6 months, planning for the next. Special topics requested by trainees. Administrative duties.

1/ See "Report to the Government of Malaysia - Development of Home Economics Programmes West Malaysia 1969-1972", FFHC/FAO Report No. 84, FAO, Rome, 1972.

Field Training - Organisation and Administration

The training to be described in detail was Phase III, the six-month attachment to a Farmers' Association. The trainees were divided into pairs and attached to Farmers' Associations in different parts of Malaysia by the kind permission of the State Directors of Agriculture, in collaboration with the Federal Ministry of Agriculture and Fisheries. The Farmers' Associations were selected by the State Directors on the criteria of general suitability and the availability of women Agricultural Assistants [A.A.(W)s], or of Peace Corps Volunteer Home Economists. The former, at that period the most highly trained women extension workers in Malaysia, held diplomas in Agriculture from the then College of Agriculture. The diploma programme included small components in Home Economics and Agricultural Extension Education. These A.A.(W)s were on the whole interested in undertaking this responsibility because there had been difficulties in the past over duplication of their activities with those of the Adult Education demonstrators and they were anxious to see some form of collaboration in practice.

The choice of Farmers' Association as the venue for training immediately solved Problem A referred to above. It also provided the possibility of valuable experience for the trainee considering her special need to become familiar with the Farmers' Associations, their staff and mode of operation. The availability of A.A.(W)s or Volunteers provided for some degree of supervision (Problem B). A small amount of money from the FFHC Programme was available to pay the trainees a small stipend to cover board and lodging (Problem C) in suitable village homes, travel expenses and pocket money. The trainees budgeted this money, kept records and had to discuss their expenditure with their supervisors.

Attaching the trainee to an established institution immediately assured her of a recognisable place in the local society - her presence could be explained to and understood by the villagers. The organization could also provide her with physical facilities as well as moral support. For administrative purposes, she was the responsibility of the State Community Development Officer (representing KKM&RD), but she reported not only to him but also to the General Manager of the Farmers' Association.

Nature of the Field Training

The objectives of the field training were to enable the trainee supervisor to:

i) become familiar with the functions of the Farmers' Associations and, in particular, with the activities of the Home Economics workers of the Association;

ii) become familiar with a village community and its individual members;

iii) gain experience of adapting to a new situation (i.e. away from home to develop independence, initiative, etc.);

iv) practise helping families to help themselves in improving rural living conditions;

v) identify a particular problem and work with a few families towards improving the situation;

vi) practise evaluating their own activities and suggesting possible future action on short and long-term bases.

To help the trainee and her supervisor work systematically towards achieving these objectives, she was presented with a guidebook which led her through five projects. Information which she obtained had to be compiled in the appropriate spaces in the guidebook. This, therefore, served as a record for her own benefit and to enable her supervisor to see the quality of her work and the stage reached. Both trainee and supervisor were instructed in the use of the guidebook.

The guidebook was written by a Malaysian A.A.(W) from the Department of Agriculture, State of Perak,(who later translated it into the national language) and an American Peace Corps Volunteer. Much assistance was gained from the U.S. Department of Agriculture publication "Training Home Economics Program Assistants to Work with Low-Income Families". It was the intention to use the guidebook with the trainee supervisors as a pre-test, to revise it afterwards and use is as a training manual for field workers throughout the State of Perak.

The guidebook was divided into five major projects thus:

Project	Nature	Duration
I	Getting to know the Farmers' Associations Staff and their functions; facilities; organisation. The home extension activities.	1 - 1½ weeks
II	Getting to know the Village Guidance on how to accomplish this. Who are local leaders, members of various formal and informal groups, personnel and activities of other departments? Simple general survey form to be completed, largely on observations from which major problems could be identified.	approx. 4 weeks
III	Planning a Programme A series of simple survey forms, one of which was to be used to obtain further information on one of the following: vegetable gardening, raising family income, child-care, house renovation, food production. (These subject matter areas had been pre-selected by the organisers as being those in which the trainees were most likely to work). Instructions and forms for planning a programme and making a plan of work.	approx. 2 weeks
IV	Carrying out the Programme Review of methods. How to plan each step in a project and a form to use for this.	up to 4 months
V	Evaluating the Programme A questionnaire for subjective evaluation, including a request for suggestions on carrying on with the project. A form to use for objective evaluation of activities carried out during the whole of IV. Guidance on making the evaluation and completing the forms.	approx. 2 weeks

In carrying out these projects, the trainee supervisor was expected to work closely with all Home Economics workers in the area in such a way that the projects could, if necessary, be continued after her departure. The trainee was to meet her A.A.(W) supervisor weekly to discuss her progress and make a rough plan for her activities during the following week. She was supplied with copies of a simple form to be used for this. As well as keeping a copy and giving one to her supervisor, she gave on to the General Manager of the Farmers' Association so that he was informed of her day-to-day whereabouts and

activities, and could give this information to anyone who needed to know. Finally, she had to complete a brief monthly report for the MNARD officer responsible for the Home Economics aspects of the Adult Education Programme, with copies to the State Director of Agriculture, General Manager of the Farmers' Association and her supervisor. She was provided with copies of a simple form to use for this.

Trainees were also visited occasionally by staff of MNARD concerned with the programme and the writer. These visits helped to ensure equal standards in the assessment of the trainees' capabilities and the evaluation of this phase of training.

By structuring the experience so carefully, it was hoped to ensure that the trainee gained the right experience, developed good working habits and that those involved would be kept informed and interested at all stages and thus better able to give their help, if and when necessary.

Evaluation of the Training

This phase of training was evaluated by the trainees in their guidebooks as well as by their supervisors, General Managers of the Farmers' Associations and officers of MNARD. Many interesting points were made and obviously all concerned had learned from the experience.

Because of the guidebook and reports, it was possible to check easily that trainees had completed all their tasks. But because of the nature of the work and the short time available, they had not necessarily been able to influence more than just a few families. The majority of the projects undertaken concerned vegetable gardening, kitchen improvements, making simple household furniture and children's clothing, toys and household furnishings. All trainees indicated that the most effective means of influencing families was found to be through home visiting.

In their evaluation, the General Managers of the Farmers' Associations expressed themselves as satisfied with the training and its outcome. Indeed, several asked if the trainees could not stay on as permanent workers for the Farmers' Associations.

The supervisory A.A.(W)s and Volunteers generally agreed that the guidebook was an indispensable part of the training and should be used again. It was found difficult, indeed, to extract information from the completed copies because the trainees insisted on keeping them and using the material in later phases of their training! A number of editorial revisions were considered necessary and some simplifications. For example, it was considered too difficult for the trainees to answer the question included in Project II asking: "What are some of the major social forces at work? (e.g. values, politics)".

Conclusion

The objectives of this course of field training appeared to be met in that the trainees underwent all the experiences required. The extent to which they benefitted naturally depended on their own personality and intelligence but also on the amount and quality of the supervision they were given.

That this form of field training and its associated guidebook have been found useful in the Malaysian situation may be gauged by the fact that further supervisors will be trained along the same lines using the same guidebook. Women extension workers being trained by various other institutions have also benefitted from the guidebook. Its great advantage seems to have been that in a new and strange situation it provides the trainee and her supervisor with clear instructions on what to do and how to plan and carry it out.

In conclusion, one point remains to be emphasized. Not only the phase of training described above but the whole programme of which it was a part depended for its success on the hard work and cooperation of workers from many different agencies. In particular, grateful acknowledgment must be made to the personnel of the Ministry of National & Rural Development, Ministry of Agriculture, American Peace Corps and, not least, Australian Freedom from Hunger Campaign.

Appendix

A typical extract from the draft version of "Baku Panduan" (guidebook) used as a training manual in Phase III (English version)

Project III - Programme Planning

Determination of Problems

Before you begin planning a programme you must determine the problems of the people. There are four major sources of information which you may use:

1. Your analysis of the "general" survey.
2. The people themselves.
3. The other staff of the Farmers' Association.
4. Your own observations.

A. Use your analysis of the general survey to see in which areas things need improving. What are they?

a. .....

b. .....

c. .....

d. .....

e. .....

B. Talk with the villagers to see what they think are the major problems. What do they say?

a. .....

b. .....

c. .....

d. .....

e. .....

C. Discuss the situation with other people (not just the Home Extension personnel) working in your area. From their experience they may have some good insights. What are their suggestions?

Appendix (cont'd)

a. .....

b. .....

c. .....

d. .....

e. .....

(This section continues in like vein until slowly the trainee is led to indicate, from all the data available to her, the most pressing needs in the area in which she is working).

A NEW LOOK IS NEEDED FOR EXTENSION*

by

Armando Samper

A quarter of a century ago an institutional innovation was introduced in Latin America that was of great importance to the rural areas of the region: education for the peasant, on his own farm and outside the school system, to make him a better farmer, his wife a better homemaker, and his children better farmers in the future.

The system was transplanted from the United States of America where for more than half a century it had been a decisive factor in building the highly productive agriculture that became the base of support for a mighty surge of industrial development. In the United States it had come into being as an effort to extend to the countryside in each region the technical innovations generated in the state universities, which were public institutions.

In that country the seed of extension fell on fertile ground watered by a good system of formal education. It reached farmers who had a good cultural background, most of whom had fair-sized farms of their own and possessed money to acquire inputs - improved seeds, fertilizers, pesticides, livestock feeds and medicines, implements and machinery - and access to those inputs at reasonable prices. They could obtain inexpensive credit when needed and were in a position to store, grade, process and sell their harvests at gainful prices.

The system was run by the state universities themselves, with the support and cooperation of the Federal Government through the Department of Agriculture, which maintained agricultural experiment stations to solve the practical problems of farming in each region. Moreover, there were enough resources for the operation of an extension agency in each locality. These agencies were headed by agricultural engineers and home economics teachers who were generally the children of farmers, had farming experience and a professional training geared to the solution of practical problems of agricultural production and country life. They also had vehicles, access to individual, group and mass communication media, and adequate funds.

Finally, both the Federal and State Departments of Agriculture had farm policies that were almost always well defined, and efficient field services to support the extension work. In most rural areas, there were roads, schools, hospitals, electric power and other facilities.

---

* Based on an address given to the Expert Consultation on Training in Rural Extension for the Caribbean and Latin America, held in Santiago, Chile, on 16 April 1973.

Not Successfully Transplanted

In the United States, extension effected a veritable peaceful revolution in the countryside. Transplanted to Latin America, it has not. Why?

First, because an innovation that had worked in a highly specific set of circumstances was transferred to an entirely different situation. The institutional scene in the United States was a far cry from the precarious conditions prevailing in Latin America. It is quite a different thing to bring informal education to a poor, illiterate peasant living in isolation, and to do so through government agencies that are deficient and short of resources, and which reach only a small part of the rural population.

Secondly, because extension work concentrated almost exclusively on the educational function and was shunted off by force of circumstances to the periphery of the agricultural development process. Later it began to be clearly understood that extension was only one element of development and could not be effective unless it were a part of a set of measures designed to give the peasant access to the land, to formal education, to health services, to credit, transportation, and markets all at the same time.

Thirdly, because faced with conditions in which structural changes were required, the extension services felt that their educational mission could yield fruits even where there were fundamental institutional failings that prevented the peasant from taking advantage of technological innovations, if any. The problems generated by dependence and the traditional agrarian, social, educational and political structures were nullifying the educational efforts of the extension services.

There were doubtless other reasons. In any case, the system struggled dauntlessly under unfavourable conditions beyond its control and was partly successful in raising the level of living of rural families. Whatever its limitations may have been, the extension system has made major contributions to the development process in Latin America. It has introduced a new philosophy of education. It has gotten the agricultural experiment stations and the ministries of agriculture to look to the countryside and to the peasant. It has made the peasants aware of their own value and importance. It has raised doubts about the system and participated in a search for new institutional solutions.

Climate of Innovation

In recent years, several countries have launched institutional experiments in other settings without abandoning the educational component of extension. These efforts, encouraged by international institutions such as the Inter-American Institute of Agricultural Sciences (IICA), the International Labour Organization, Unesco, UNICEF and FAO - among others - have created a climate favourable to innovation that is essential if new paths are to be charted for extension in Latin America.

Within the United Nations family, FAO has been in the van of the movement for the renewal of extension in the Region. It has organised a chain of international meetings in which the present series of consultations in Mexico, Jamaica and Chile, on training in extension subjects are links.

Recent years have witnessed the holding of two meetings, other links in that chain, that have provided guidelines for these consultations. The first was the FAO/Unesco/ILO World Conference on Agricultural Education and Training, held in Copenhagen in 1970 under the auspices of the Government of Denmark. It considered extension in the general framework of the agricultural education system. The second was the Seminar on Rural Extension in Latin America and the Caribbean, held that same year in Chiclayo, Peru, under the auspices of FAO and the United Nations Development Programme, and the sponsorship of the Government of Peru.

The Chiclayo Seminar analysed the development and functions of extension services in the region during the decade 1960-1969. It went thoroughly into the conditions and requirements to be met for extension work to be an efficient instrument for rural development in the changing situation of the agrarian sector. It also laid the basis for an extension strategy for tackling the problems of the countryside with an integral approach.

The present consultations are not being held to discuss the organization and functioning of extension services. These aspects were discussed in the Chiclayo Seminar. Their purpose is rather to arrive at a new and critical view of the training of extension workers on the field level, through the eyes of the peasants themselves and in the light of their needs.

Different Training Needed

If rural extension is to shift its traditional approaches, its personnel will have to be trained differently.

First, extension will have to be based on a clear understanding of the rural situation and of the impediments that have limited its role in Latin America. This entails a better understanding of motivation, so that resistance to change may be harnessed for constructive purposes and of the social context in which the work goes forward. It also entails making extension work respectable by enabling extension workers to identify fully with the population, their claims, values and interests, so that the peasants may feel that extensionists stand beside the broad mass of the underprivileged population.

Secondly, extension will have to operate in the context of a broad vision of development like the one unanimously adopted by the representatives of the Latin American governments in the Eleventh Regional Conference for Latin America, held in Caracas in 1970, and of an advanced definition of the function of rural extension like the one adopted in the Chiclayo Seminar. In particular, provision will have to be made to ensure the participation of the different strata of rural society, particularly of the less privileged peasants, and to promote recourse to associative arrangements for ownership, production and marketing through cooperatives, communities, labour unions and other types of peasant organisation.

Thirdly, extension will have to mobilize the rural community to bring about the required structural changes. The paternalistic approach of government services has often reinforced rather than diminished the sense of dependence of the peasants. Hence, the traditional local leadership is a hurdle to overcome rather than a promoter of development and participation. United Nations circles are scrutinising new approaches to community development in which overt or latent internecine struggles and conflicts of interest in communities are harnessed dynamically and constructively as forces for renewal. Hence, extension should look to the militant peasant organization which forcefully represents the interests of the peasants, as a useful factor in its work.

Fourthly, since extension aims not only at technological change, but also at changes in the social structure, extension workers must be so selected and trained as to ensure that they are able to identify themselves fully with the rural population. In the past, the training of extension workers had been mostly oriented to the imparting of technical knowledge to the neglect of the human and social aspects. Attention to these is essential if the extension is to function effectively as an agent for change.

A Strategy from Below

Our aim is that the participants in these consultations may develop ideas that can help the governments re-fashion their training systems. We hope this will give rise to a new training strategy that FAO can use in its programme of assistance to governments, a new strategy hammered out from below and hence springing from the peasants, those who aspire to produce better, raise their level of living and participate actively in national life.

4-D RURAL YOUTH CLUBS IN DAHOMEY

by

Antonio Aimé

Education for development is of the greatest possible significance to those countries heavily dependent upon agricultural resources. And agricultural extension services can play a prominent role in this educational endeavour for all sectors of the rural population. The successful establishment in recent years of the 4-D Clubs for Rural Youth in Dahomey is worth putting on record in this context.

Background

In 1966, Dahomey had several rural youth programmes. However, the Government was not satisfied with their operation. The adverse effects on agriculture of the mass flight of youth to the cities had been the subject of protests by the farmers themselves and it was therefore deemed advisable to adopt some new forms of action.

FAO, through its Agricultural Extension Officer working in Dahomey, played a leading role in helping to identify the problems and in finding solutions.

At an early stage, a modest project for the accelerated training of young farmers was worked out. It included 18 rural youth clubs (modelled on the U.S. 4-H clubs). A request for financial help was first addressed to the Freedom from Hunger Campaign; subsequently, another request was made to the U.N. Emergency and Reserve Funds for the establishment of these 18 clubs.

The "Service de l'Agriculture" in Dahomey, which was very much interested in this project, and despite its limited means, lent material and equipment for the first two 4-D clubs 1/ established on the outskirts of Porto-Novo in 1967.

When external aid became available, plans were made for the establishment of 85 clubs. Each 4-D club of rural youth has from 8 to 30 members, ranging in age from 8 to 17, and within each club the age differences did not as a general rule exceed three years.

Method of Creation of a 4-D Club

No magic is involved in establishing or operating a 4-D club. Agricultural extension agents accustomed to executing programmes that keep them in continuous contact with the rural population can easily undertake such an activity. The measures to be taken are, in principle, much the same as those for the introduction of new crops, the solving of irrigation or drainage problems, or the organization of adult groups. What is required is a methodical action plan and a conviction that one is accomplishing educational work calling for additional effort and patience.

1/ The 4 Ds stand for Decision, Duty, Development, Dahomey - which in full signifies "We have decided to do our duty for the true development of our beloved Dahomey."

A thorough knowledge of climatic conditions, the agricultural patterns, as well as the economic and social situation of the locality, will be helpful for defining the goals of a youth club. An extension worker should, therefore, attach the utmost importance to the study of the community where he is thinking of organizing a club or he runs the risk of giving priority to the wrong activities - recommending raising of pigs in a Moslem area, for example.

In organizing the youth clubs, the local authorities had to be contacted at the outset. In fact, these local authorities, above all the village chiefs, helped the agricultural agents to convince the parents of the need for educational work among their children. The village chiefs provided some or all of the land required, or helped to acquire land from other landowners. It is always best to have a village chief on one's side. Progressive village chiefs can furnish enormous help in overcoming difficulties which may arise concerning members or their parents. On the other hand, some chiefs may be negative or antagonistic because they can see no immediate advantages to be gained either for themselves or for the villagers.

Contacting existing agencies in the community is equally important as their cooperation can be vital at certain moments in the life of a club. The purposes of the rural youth club must be explained to such organizations and must not duplicate or conflict with their activities.

One of the strongest features of the 4-D clubs in Dahomey has been that the parents themselves have sponsored them and that they collaborate closely in keeping them in operation. It is perhaps surprising in a country where children represent an appreciable labour force to their parents, that the parents nevertheless cooperate when they are entirely or partly deprived of their services. In fact, the collaboration of parents has been demonstrated at every stage in the life of these clubs. When this ceases, the clubs cease to function. It is therefore vital, even before a club is organized, to contact the parents individually and in groups to explain its purpose and its method of operation.

Once parents have given their consent, it is possible to forge ahead and contact the young people themselves, both individually and in groups. They must, of course, know what will be expected of them in voluntarily joining a club after fully understanding its aims and objectives.

Starting a 4-D Club

Once the consent of the local authorities, the parents and the young people themselves has been obtained, and a piece of land acquired for club headquarters, materials have to be found for getting the club into operation. The main requirements are farming implements, seed and fertilisers, livestock and, possibly, equipment for arts and crafts. All of this requires funds, however modest, which the young people or their parents are rarely in a position to furnish. Accordingly, Dahomey was obliged to draw on outside sources of financing.

None of the clubs benefited from any material aid until they actually had started their work. In order to show their determination to help themselves, each newly organised group had to rely on their own means for at least one full crop year. Traditional tools and implements were used and seed was supplied by the parents. The young people prepared their own meals with food they brought to the club.

Here it should be pointed out that if only the educational aspect of these clubs was emphasized, they would have had a short existence in Dahomey, where young farmers learn very early the value of money which they are obliged to earn to keep themselves and sometimes even to support their parents.

Clubs must therefore have economic and financial goals and become paying propositions. This is probably one of the essentials to ensure the collaboration of parents who feel that they can in this way pass over some of the responsibility for their children when they join the clubs. For instance, the young people have to feed themselves at least during the hours that they spend at the club.

Accordingly, food aid is requested from the World Food Programme for the first two years of the club's existence - a sufficient period of time for them to stand on their own feet. Once this stage has been reached, the club is registered with the "Jeunesse rurale du Service de l'Agriculture" and is authorized to receive assistance in the form of agricultural equipment and food.

The agricultural extension service agent who works in direct contact with people living on the land or, alternatively, the agricultural instructor, is a vital factor in the life of any club. It is he who gets it organised and helps lay down guidelines in pursuit of its objectives. However, the agricultural agent must leave the management to the club members themselves, having arranged for them to elect a president, a secretary and a treasurer. Certain clubs, in addition to such a group of officers, have set up a sales committee and assigned one person to take charge of recreational activities. Since club members are not usually qualified in accountancy and book-keeping, the organizers themselves usually perform these duties.

Functioning of a 4-D Club

Once all the conditions for operating a club have been fulfilled, the membership works out its own programme, which is always very simple and is presented in the form of a listing of various types of work to be undertaken during a fiscal year, or sometimes for a crop year. This programme should be worked out jointly by the agricultural extension agent and the club members.

The scope of the programme depends on the membership of the club, the age of the members and the material means available to them (land, seed, fertilizers, etc.). As a rule, a club starts its agricultural work on about one hectare of land.

In contrast to formal educational institutions that have curriculum laid down when recruiting students, 4-D clubs invite people to determine, or at least to participate in determining, the aims and goals of their own apprenticeship. Club members therefore have an opportunity to learn-by-doing; they are the moulders of their own destiny. One can readily imagine what courage is required on the part of an agricultural extension agent as well as a few adolescents who, on the first day, approach a piece of land lying idle or a small bit of forest or woodland where they plan to set up a club. Nevertheless, within a short time it is sometimes possible to assess their determination by the changes that they have brought about, the crops that have been grown on the land and the buildings they have erected. Clubs work every day of the week except Sundays and holidays.

The programme of a 4-D club is usually unambitious at first, even from an economic point of view. However, as a club grows, certain activities become necessary and since the essential needs of farmers are practically the same throughout Dahomey, all the clubs end up after several years of operation by resembling one another to a certain extent from the standpoint of infrastructure.

Crop Farming

Ordinarily, clubs begin by agricultural work, growing those crops that are most usual in their areas. In the south, they begin with plots of maize and peanuts, whereas in the north it is usually cotton and millet. Gradually, some crop diversification is adopted and the clubs branch out into new crops - cassava, yams, rice, sweet potatoes, gombo, pineapple and various vegetables.

The clubs start on a small scale with plots solely for instruction purposes. Later, most crops, especially maize and cotton, are grown on an increasingly large scale until a club may farm as much as 10 hectares.

Whatever the size of the plots, the highest technical standrads must always be observed, and that is why the fields of certain clubs are practically as good as those of experiment stations. Passers-by and visitors are very impressed. One administrator, an officer of a prefecture in Dahomey, visiting such a club for the first time marvelled at seeing a maize field covering 8 hectares. "This is where the revolution starts!". Was he alluding to the 'Green Revolution'? We don't know, he did not enlarge upon the remark.

Stock Raising

As in the case of crops, stock raising by clubs starts out on a very modest scale at first. Usually they begin with poultry raising, establishing the necessary facilities at great sacrifice, the members themselves bringing their first breeding stock from home; ordinarily, members supply the hens while the "Service de l'Elevage" provide the cockarels. Many clubs do well with poultry raising.

Other clubs have started by raising ruminants and pigs. Some that are able to establish good pastures and have shown that they can work effectively have benefited from the "métayage" system launched by the "Service de l'Elevage, whereby they obtain herds of from 5 to 10 head of beef cattle. According to the agreement reached, the club is expected to multiply the herd over a period of five years and then return to the"Service de l'Elevage" the number of animals originally received.

Under the "métayage" system, several clubs - to the great astonishment of the parents of their members - have proved their excellence in raising cattle. Thus, particularly in certain villages of southern Dahomey where cattle raising is disdained, they have discredited the popular saying "We are not cattle herders". Stock raising can also be a favourable factor in the development of crop husbandry, using the draught animals that certain clubs are introducing.

Literacy Training

Another function of great importance in the programme of the 4-D clubs is literacy training. The young people, most of whom are illiterate, are taught the three Rs - reading writing and arithmetic, and how to use scales. The courses are generally given in French by the extension agents. Some indication of their value can be gained from the attitude of a certain parent in southern Dahomey. So satisfied was he with the progress of his son attending the club that he decided to take another of his children out of the local elementary school and send him to the club instead. The extension worker had to persuade him not to do so!

Miscellaneous Buildings

Throughout their existence, the clubs are obliged to take on other activities that are essential either for day-to-day living or because they help them in carrying forward their economic operations or promote more rapid development.

The building of a house is the first requirement for any club because the young people need shelter in case of rain or during the hot hours of the day. Ordinarily, a club begins by building a shed (called an "apatam") and later on when it has the necessary means erects a two or three-storey building with a meeting room, a classroom for the literacy courses, storage facilities and a workshop where instruments and tools can be kept.

At the outset, the water supply is almost always a problem for clubs, members being obliged to carry from their own homes each morning the quantity of that precious liquid that they will need during the day. As the clubs get settled, however, and are able to tackle the problem of water for themselves, for their animals and even for some crops (plant protection treatments for cotton plants, watering the kitchen gardens), they start to think in terms of digging wells, or building cisterns.

For sound management of livestock, some clubs have built poultry houses, others, pigsties and sheepfolds, and still others stables. One comes across clubs that have all these facilities and raise several kinds of livestock.

As for the problem of drying of maize in the rainy season, clubs in the south of the country have received technical assistance of U.S. volunteers in building drying kilns. The price of maize is very low at harvest time so that the operation of drying is useless unless this product can be properly stored while awaiting higher prices. Accordingly, some clubs, also with the help of U.S. volunteers, have built stone silos. As a rule, a maize-growing club begins with a 2½ to 3-ton silo.

Mention should also be made of the fact that, thanks to the Freedom from Hunger Campaign, some financial assistance has been made available to build houses or to dig wells.

Other Activities

As a contribution to rural community development, clubs participate in construction work, in laying and repairing of service roads, paths and gardens. They organise leisure time activities for their members, and at the end of each year hold festivities to which the inhabitants of neighbouring villages are invited.

A club that develops normally, growing crops, organizing and raising of several kinds of livestock, and constructing buildings, soon comes to take on the appearance of a small farm. During an excursion organized on the occasion of a recent national seminar on agricultural extension, a senior officer of the "Ministère du Développement rural et de la Coopération du Dahomey" (Ministry for Rural Development and the Cooperative Movement of Dahomey) was moved to exclaim as he approached a club "But this is a real farm!".

Girls' Club Activities

The 4-D girls' clubs and sections for the girl members of mixed clubs, offer many activities in addition to crop growing and stock raising - sewing, embroidery, the culinary arts and handicrafts (making pearl necklaces, ear-rings, and so on). They also process local products such as pineapple syrup, and make preserves from mangoes, pineapples, oranges, papaya, guava, etc. The clubs, which are led by home economics workers, also offer literacy training for their members.

Influence of Clubs on their Members

Altogether, the activities of the clubs provide an atmosphere and environment with which the young people come to identify themselves. Eventually, they find it hard to adapt to any other. This happened, for example, to Codjo, who in 1967 was the youngest member of the Ayou club. Having been a club member for five years, he was obliged by his parents to go to learn tailoring at Cotonou. One day the heads of the rural youth programme were sorry to learn that he was to leave. But a month later Codjo turned up again as a member of the Ayou club. Asked the reason for his return he simply said that he could not live far away from his club comrades; he felt good when he was with them and that his place was there. Codjo is a member of the Ayou club to this day.

Conclusions

Although initially conceived to provide members with training in crop growing, stock raising, the manual arts and to develop a civic sense, the 4-D clubs have proved to be important rural community development institutions. They are interested in all aspects of rural life and also train their members for better adaptation to the rural environment as adults.

The rural communities of Dahomey have reacted favourably to the educational work undertaken through these clubs, cooperating day by day in a positive manner, while new members are constantly being recruited.

The initial aim of the project, viz: the accelerated training of young farmers, which was the basis for the creation of 85 4-D clubs, has been more than realised, for in April 1973, Dahomey had about 200 4-D clubs with a total membership of 3,000 young people.

Together with a programme for employment of the young farmers trained at these clubs, which is shortly to be implemented, Dahomey is carrying out work among its rural youth which will assuredly contribute a great deal to the country's development.

SOCIOLOGICAL ASPECTS OF RURAL TRAINING

by

John Higgs

When looking at the purpose and objectives of intermediate agricultural education, the subject is found to be surrounded by a certain amount of fog. Pick up any paper dealing with the subject and it will certainly stress its importance; it will, for example, state that rural development cannot be achieved without a trained band of technicians at the intermediate level who represent the essential link between highly-trained research men and the farmer. Few, however, ask what the real nature of this link is, what the research man can contribute to it and how the farmer can benefit from it. The university-trained man pronounces, the intermediate man repeats the message, and the farmer - eager for knowledge - receives it and acts on it. This is the theory, but the truth is that we rarely examine the real nature of the effort which must be put in at the intermediate level to promote change in the traditional community.

I do not wish to be considered as a sociologist talking sociology. I am merely attempting to look at the role which sociological and socio-cultural tools should and can play in the development of the educational system and in the understanding of the farm community and its aspirations. At times this must lead beyond the bounds of strictly intermediate-level training, but then the latter will play a very narrow role unless it is viewed in the total educational context.

Social development - or for that matter the economic development - of communities cannot be separated from institutional development. In the majority of developing countries the institutional framework has been inherited from colonial times, or otherwise imported. Nationals who have set the pace in economic and social development have often received their training in the developed world, or at least at the hands of those who were trained there. The whole basis of educational institutions has been transmitted from another environment and from other social and economic conditions. Yet the resultant patterns to be found in the developing world are rarely questioned. The basis of educational institutions in the developed world was urban; but it was more than urban, it aimed specifically at releasing people from the lack of economic opportunities in rural life.

Concentration on Institutional Structure

Transfer of alien institutional structures to the developing world has often done harm. The manifestations are there to see in many countries: the creation of educational elites who no longer work at the levels at which they can most help their society; the identification of progress in education with organisation of qualifications, and so on. Similarly, "intermediate level" education, as typical of developed countries, has been assumed to fit naturally into a developing country context. We have concentrated on the institutional structure without considering whether in fact various forms of non-formal out-of-school training might not produce results more quickly. We have consistently pleaded for more money for educational endeavours and often suggested that the lack of educational advance was basically due to the lack of funds, ignoring the fact that increased investment cannot compensate for an institutional framework that was never suited to the task in hand. And let it be noted that we have neglected to a large extent the education of women in developing societies.

To say "we" in this way is not wagging a finger at any particular person or group. All who have had a hand in the development education endeavour have made their contribution. The reappraisal that we must now undergo is, to use the old cliché, an agonizing one and it is no less so because it has gone unheeded for so long.

There are too many countries in the world in which the educational efforts of the last two decades have had little impact on the quality of life of ordinary people. The farmer and the farm family are no better off; the hopes for the future of rural youth are tragically slender; the prospects for a better life for the rural dweller do not appear to be just around the corner. The fervent hope of every farmer in the developing world is that, by some miracle, his children will be enabled to break free of the bonds of rural servility and escape to the towns. The way out continues to be through education and through a system which is specifically designed to encourage it.

Of course, it would be stupid to lay the blame entirely at the door of education, for this is not the case. There are many other factors in rural development. But education and those who work in its cause must take a large portion of the blame (and within education must be included extension services, youth programmes, women's programmes and the like).

Underlying Social and Institutional Problems

It is commonplace, when talking of the slowness of rural development, to blame the economists, the planners, the people who take calculated decisions based on supposedly known responses. Sometimes there may be justification for this view, but often the reason lies not in their inadequacy as economists or planners, but in their failure to put sufficient weight on the underlying social and institutional problems. A substantial educational input without appreciation of the need for, say, comprehensive agrarian reform, may have little effect. Price adjustments without a full realisation of the need for farmers' associations or cooperatives may equally fail. Education is but one of the inputs, but when it is provided without an awareness of the social constraints and the requisite institutional framework, one can hardly expect great success.

Sociology, as such, has not earned for itself the highest of reputations in rural development. Plain men find the terminology used by practitioners difficult. I am not in any sense trying to denigrate the important contributions made by sociologists and cultural anthropologists to rural development. It is merely suggested that sociology be used in a practical way. Divorce between the economic and sociological viewpoints has tended to become too great. Planners tend automatically to accept the need for economists, just as those who teach tend automatically to accept the role of training in the subject of 'teaching'.

Planners and teachers alike need a much fuller sociological understanding of the situations within which they are dealing. The motor car and television world of many urban societies has certain superficial similarities which we have come to accept as representing a sameness the world over. At the village level, even the most superficial observer can spot the differences. He might not, on first acquaintance, know whether he was in an area of tribal organization, of matrelineal succession or of nucleated families, but he could tell that the people had many customs and habits peculiarly their own. Unless the educational structure of the country is closely related to the needs of the society and to the social background and culture of the people, its objectives will not be reached.

Education and the Farmer

The basis of education and training at the intermediate level in developing countries up to the present has been predominantly technical. It is still possible to find institutions turning out intermediate technicians teaching only the biological sciences and related subjects. Important matters like farm management, simple economics, extension methodology and aspects of sociology do not get a look in. The underlying assumption is that rural change and development result from technical efficiency. Perhaps the dramatic

effects of the Green Revolution in certain countries have strengthened this belief. The second and third generation problems in many countries may show the other side of the coin - that you cannot promote a better life and living conditions for the rural masses by technical innovations alone. It will be interesting to see in some countries how fairly the wealth is distributed in ten years time.

Henry Ford, the automobile king, got along alright with the slogan "history is bunk", and his success has led technocrats to the extreme view that you did not need to glance over your shoulder at the past in order to create the future. In direct contradiction to that belief, my submission is that unless educators understand the traditional life and work of the people with whom they are dealing, they will not get far.

Progress in any society demands change. We would never expect that in promoting rural development societies will stay as they are. It is axiomatic that in order to improve their standards of life and their prospects, they will have to give up many of their traditional ways. It is salutary to remember that what most people ultimately want is the motor car and television economy. On the other hand, we are well aware that most societies cannot achieve it very quickly and that the majority will wait a very long time before obtaining anything approaching it. Our job in teaching, therefore, is to do all that we can to improve the quality of life by building on to the good things that exist in it. If the so-called developed world had realized earlier the devastating, detribalising effect of urban development in the concrete age, there is little doubt that more would have been done to preserve the traditional qualities of their communities.

Difficult for Expatriates

One of the first responsibilities of agricultural technicians, therefore, is to try to understand the people with whom they will be working. For this reason, it is very difficult for expatriates to play a significant role in teaching at the intermediate level. It is difficult enough for nationals, many of whom come from urban society; but at least in their case, identification of village problems may be easier to comprehend. However, history in developing countries is rarely written and socio-cultural studies of society are few and far between. The teaching of straightforward rural sociology, however well it may be done, may not have the required effect of putting students in close touch with those with whom they will be working. What is needed is a close understanding of the motivation at the farm level. This requires an awareness of history and customs, and the social organization of the people.

There are plenty of examples; a few will suffice. The Indian Raiga refused to use an iron plough rather than a less effective wooden one since this would repay the generosity of the land with harshness. Newly-settled bedouin in North Africa would not live in the houses provided because they were not as convenient as tents - the designers had not studied the habits of the people and had based the houses on European designs. A farmer in East Africa had bought a very large tractor for a very small area of land because he had heard that farmers in Europe had tractors and were rich; therefore, the larger the tractor, the richer he would appear to be. So one could go on. There is an infinite variety of customs and observances which has to be understood in the course of development.

Two major practical steps must be taken to ensure that development technicians have the right orientation. The first is to ensure that all intermediate teaching contains sufficient 'sociology' to enable students to understand the role of social and cultural knowledge in promoting change. This is not easy because so often the expertise does not exist; there are no people with the right background to carry out this teaching and put it over in a clear way. There is a tendency among the 'educated' to look on the peasantry as backward. In fact there are many lessons to be learnt from them which would facilitate the job of the technicians. The extension worker who can move among farmers understanding them and able to converse with them on their own terms is in an immensely superior position.

The second point, the unsatisfactory nature of practical work in intermediate teaching, is closely linked. If one asks at an intermediate institute how much time the students spend in practical work, the answer will be 30 to 50 per cent. But what does that practical work consist of? As likely as not, working on small trial plots on an inadequate institutional farm. (I recently visited an institute in which thirty students were doing 'practical' work with irrigation equipment on about one-tenth of a hectare). Alternatively, they will be working on a large commercial farm, much of which is highly mechanised and which bears remarkably little relationship to the conditions they will experience after training. Both these types of practical work may be desirable; but there is a third kind rarely practised - practical work on farms, with working and living conditions which relate closely to the farming of the area. Many students coming from urban backgrounds have little experience, even by the end of their course, of genuine farm conditions and of farm family problems. However much teaching methods may be improved, there is an urgent need to relate intermediate teaching to the local farm level, to get to know how farmers and their families work and think, how they arrive at their decision-making, what role the women play, their sources of motivation, and how they react to new ideas.

The Social Laboratory

In South East Asia, the concept of the 'social laboratory' as a research and teaching instrument has emerged. Some such concept is quite as important in training future technicians as the science laboratory; teaching and research can then go on hand-in-hand in rural areas. In the course of their training, students have to work on real farms for a spell at least. Where circumstances permit, they should live with the families under the same conditions. If this is a serious aspect of the institute's curriculum, the graduates will be far more effective. And in time the institutional teaching problem will be overcome, because instructors will be more fully aware of the social components of agricultural development.

POPULATION EDUCATION IN THE DEVELOPING COUNTRIES
THE ROLE OF RURAL EXTENSION SERVICES

by
Warren E. Schmidt

Serious attention is being given to population growth throughout the world. This is unparalleled in the history of mankind. Growth of population and of economic development, especially in the more developed countries, are rapidly depleting non-renewable resources and polluting the environment at an alarming rate. In spite of valiant development efforts, per capita improvements in standards of living are being increasingly retarded by continued population growth in the developing countries.

Bringing this demographic explosion under control has become a priority - if not the priority of many countries. This raises an important question for all educational institutions. What responsibility should they assume in relation to population education? How can rational decision making be strengthened in this key area?

This article will look at the question as it applies to rural extension services, generally the main non-formal educational institutions in the rural areas of developing countries. First, however, let us consider the population situation, its background and its implications for the future in more detail.

History of Population Growth

For thousands of years the population of mankind grew very slowly. It is estimated that there were only about 5 million humans in the world in 8000 B.C. By 4000 B.C., the approximate date of the first Egyptian Empire in the Nile Valley, the population had increased to about 86 million - an average growth of only about 20,000 per year. Four thousand years later there were still less than 300 million people in the world. In the year 1500 there were about 500 million - less than the present population of India.

New medical and health measures in the years following began to reduce the death rate, and between 1500 and 1850, the average growth rate increased to one and a half million per year. In about 1850, the world's population reached its first billion. With the spread of modern medicine and increased food production, the second billion came only 80 years later, in 1930. Thirty years later, in 1960, three billion was reached. The fourth billion will take 15 years, and the fifth, demographers tell us, will arrive ten years later in 1985.

Clearly, the world's population growth rate has become "explosive". In fact, it has established such momentum that even more effective population control measures will not begin to have an impact until well into the next century. Demographers now predict that the population could reach some 16 billion (four times the present level) by the year 2100.

These figures are staggering. During the next 15 years, we are advised, the world's population will grow by about one and a half billion - as many people as there were in the whole world at the beginning of this century.

Only during the past decade have the full implications of today's population explosion become more widely appreciated. During the last few years, the United Nations system has instituted a serious and concerted programme in this area. The matter was specifically raised in the UN Generaly Assembly in 1966. This led to the establishment of the United Nations Fund for Population Activities (UNFPA) in 1967. The Fund is made up of voluntary contributions. The UNFPA Report for 1969-1972 indicates that "56 governments had pledged $79.2 million by 31 December 1972 - the Fund is supporting over 470 projects in 78 developing countries, including numerous regional and inter-regional undertakings."

Far-Reaching Consequences

There is now a better appreciation of the relationship of population growth to increased unemployment and under-employment, land fragmentation, malnutrition, limited educational opportunity, and also to the problems of population pressure in urban areas arising from rural exodus. Most developing countries now see that the sheer cost of feeding, housing, educating and providing health care for the large numbers of dependent young people in a rapidly growing society leaves little potential for savings to improve levels of living - especially among the mass of subsistence-level rural people.

In short, rapid population growth is having far-reaching consequences for the quality of human life, and calls urgently for a wider understanding of population trends and their causes; and of their effect on the economic, social, environmental and political aspects of society. The right to information and the means to make parenthood not a matter of chance but of free choice was universally accepted as a human right at the U.N. Conference on Human Rights held in Teheran in 1968.

Although there is some evidence that fertility rates are falling in certain areas, the death rate, especially among infants, is falling even faster. Life expectancy in the less-developed countries is steadily rising as a result of improved nutrition and disease control, thus making it still harder to limit net population growth. But, as pointed out above, the real potential for population growth lies in the present age structure of the world's population. The large proportion of young people in society means that each year growing numbers are entering child-bearing age. The problem is particularly acute in the less-developed countries where 71 per cent of today's population are growing at 200-300 per cent above replacement levels.

In the past, population growth and industrialization went hand in hand. Today, population growth looms increasingly as a serious barrier to development. Growth rates in the developing countries are 2 to 4 times higher than those which prevailed in Europe during its comparative period of development. At that time, the growth rate rarely exceeded one per cent, and any local pressures were usually offset by emigration. Also, a lower ratio of dependent children and aged, as against the economically active population, allowed more savings for investment in production and development.

More Drastic Steps Needed

What are the answers to this situation? Many countries are adopting population policies which encourage family planning and services, but few have yet found it politically possible to take the further steps which some demographers feel may be necessary, such as: a higher legal marriage age; wider opportunities for women's employment, education, etc.; economic incentives for limiting number of children; sterilization after a certain number of children; and possibly reconsideration of criteria for the termination of unwanted pregnancies.

Although most countries with population policies encourage family planning and related services, these programmes often quickly reach plateaux of effectiveness due to limited understanding and motivation among the people, and inadequate services, especially among the poorer and more isolated rural masses.

Pre-Requisite for Development

Experience in the more developed countries appears to indicate that motivation to limit family size comes as a by-product of economic development with social justice. But with population growth largely offsetting development efforts in the developing countries, population control would seem to be a necessary pre-requisite for their continued development. Voluntary controls by the people themselves are clearly preferable to compulsory government measures. Therefore population education, especially related to the rural masses, must play an important role in breaking this vicious circle. In the long run, only the people themselves can solve the problem through personal decision making based on their individual awareness of the problem and concern for their own welfare and the welfare of their family and nation.

Role of Extension

At the national level, all rural educational agencies must be mobilized for this task. Among the major out-of-school educational institutions in rural areas, the various extension services have both an opportunity and a responsibility to include population education components in their educational programmes. This will not be an easy task for a combination of reasons.

First, the masses of rural people are difficult to reach with such a message. The broader national issues seem to have little relevance to them. They must be approached in terms of the attitudes and values of their cultures. They will be convinced only by considerations which are really meaningful to them as individuals and as families. This means stressing the relationship of the numbers of children to such factors as more adequate nutrition, the health of children and mothers, greater educational opportunities, better employment, better housing, more and satisfying leisure time - in short, a higher general standard of family living. Against these arguments will be the traditional values placed on large families, such as social status for the family, children as an economic asset, old age security and the importance of male descendants. How do you counter the argument that children are "the will of God", or that having children is a human right? Only through education can it be brought home that it may not be God's will, or a human right for an excess of children to be born into grinding poverty, destined to be ill fed, ill housed, unwell and without hope of human dignity. It may not be social justice to have an excess of children condemn the family, community and nation to a life of misery and hopelessness. Is not social justice rather to bring births into a harmonious relationship with the ability of parents to discharge the obligation of parenthood?

Secondly, and perhaps as difficult, is the problem of convincing similarly traditional extension services that such a purpose falls within their area of responsibility. Most extension programmes are geared largely to the technical aspects of farm production and better home-making, as the role of extension is mainly conceived in these terms by not only extension administrators and their field staffs, but by the rural people as well.

Generally, extension services must be challenged to view their education and leadership roles in broader terms, considering the overall needs and interests of rural families as the basis for programme formulation. Exclusive concentration on the technical requirements of agricultural productivity, while ignoring broader human and social considerations, can no longer be justified. This will require greater emphasis on socio-economic studies (rural sociology, economics, farm management, etc.) for extension workers in both their pre-service and in-service training. Such training will include components of population education, as consideration is given to questions of social goals, people's participation, levels of living, and policies of agricultural and rural development.

Thus, population education is not a matter of teaching population elements in isolation, but seeing that the relevance of population change is considered when analysing the dynamics of development and the quality of life at both national and local/family levels.

Farm, Home and Community Planning

An effective method of establishing a broader socio-economic base for extension work is to start with farm, home and community planning. This can be instituted with community groups - helping them to identify their social goals, to learn the skills of problem solving and to institute activities contributing to their welfare. It can be continued at the family level through farm and home planning. In the process of such an approach, the question of family size, as it relates to both the level of family living and the pace of community (and national) development, will naturally arise as a central issue.

How to overcome the limitations of present practices and to create a climate favourable for the adoption of new systems and methodologies, is a challenge which all extension programmes face. It will require new perspectives, broader programme content, new working methods with materials to match, and new areas of emphasis in both pre-service and in-service staff training 1/.

1/ FAO's Agricultural Education and Training Service, in recognition of the close relationship of population to both agricultural and national development, is giving increased attention to providing the types of assistance extension administrators may need to achieve such new objectives - initially by the provision of training materials and the addition of population education components to pre-service and in-service training. Directors of extension services are invited to discuss this matter with FAO Country Representatives, if they would like further information and/or materials and staff training assistance in this field.

Extension Workers from ICIRA (Chile) discuss vineyard techniques with a campesino on a newly-formed cooperative farm (assentiamento) (Page 1)

Three beneficiaries of agrarian reform in Chile discussing training needs. (Page 1)

Young cowman in Chile - who is also in charge of the milking parlour on a cooperative farm - rounding up the cattle (Page 1)

Getting to know the wives and daughters of members of a Farmers' Association in Malaysia and teaching them to make useful articles from small remnants of cloth (Page 9)

The finished product - a supervisor ready to visit her workers in Malaysia. This illustrates an example of the collaboration between different agencies: the three-wheeler is supplied by UNICEF (Page 9)

Terraced mountainsides in the Yemen Highlands
(Page 59)

A pair of working oxen in the Yemen with their mid-morning feed tied to their yokes (Page 59)

Discussion in the field with the extension agent on cotton culture (Mono region, Dahomey) (Page 19)

Construction of house at Pongbo, Dahomey. The Chief of the Rural Youth Division proposes a better method of work to the youth (Page 19)

Tobacco culture (4-D club at Sekou, Dahomey)
(Page 19)

SOME OBSERVATIONS ON MIDDLE-LEVEL AGRICULTURAL EDUCATION

by

R.G. Mortimer

Essentially, the aim of middle-level agricultural education is to provide effective training leading to satisfying careers for persons who will be operating in the area between the university and near-graduate level on the one hand, and the craftsman or worker on the other.

At the upper end of their training, students must approach a level where they are able to evaluate the research work coming out of the university departments and research stations; at the same time they should be able to carry out all the tasks the workers with whom they are operating are expected to perform.

A rare combination of attributes is required by these students. This is one reason why there is often a shortage of them. Frequently, the more intelligent among the potential students aim for university entry and training, and, if denied this, become dissatisfied with their middle-level training. At the other end of the scale, students enter intermediate level training when they would really be more suited to craftsman or worker roles; hence they end up with frustration because they are frequently expected to operate beyond their capabilities. Incidentally, the problem is not confined to agriculture: most industries suffer in failing to provide effective bridging of the gap between top-level management and the factory floor operatives.

The matter is, however, especially important in agriculture because farming is a basic industry employing a large proportion of the world's population. The success of their efforts in producing food determines the health and survival of many millions. The dilemma is also greater in farming because it is the one industry from which large numbers move to other industries which are urban based. Yet the capacity of industries in developing countries to absorb the rural migrants is, generally speaking, limited.

Connections More Important Than Differences

The problem of middle-level training in agriculture cannot be dealt with in isolation. There should be no water-tight compartments between the three levels into which training has arbitrarily been divided. The connections between them are far more important than their differences. It is the total system of agricultural education and training which makes for an effective agricultural industry; and all countries gain from having a well-integrated and planned structure which makes maximum use of all available resources. In the same way, agricultural education in its entirety should not be considered in isolation from research and extension work. There must be really effective communication and cooperation between all three activities if each is to make its full contribution to a country's agriculture.

The terms 'middle-level' or 'intermediate' agricultural education and training include many different fields closely related to agriculture - such as animal health, forestry, fisheries, cooperative management, nutrition and land reform. Indeed, the whole area is so broad that a 'status level' concept of intermediate training, as exemplified by the award of a particular type or level of diploma or certificate, can be misleading; it may be preferable to define intermediate-level training in terms of performance capability.

Wide Range of Skills

The essential purpose of intermediate-level training is to prepare people for employment as technicians in a wide range of skilled occupations. The emphasis must always be on practical application and the technician must aim at understanding the basic principles underlying modern methods in his chosen skill, as well as acquiring technical and managerial abilities. The level attained in training is likely to be directly linked to the stage of rural development of a particular country.

There is a fundamental difference between the capabilities expected of men or women trained at the intermediate level and those with a university or higher level training. All too often, intermediate agricultural education tends to be failing in its true objectives and will not make its proper contributions to the development of the skills and techniques essential to modern agricultural production. Nonetheless, those trained at the intermediate level should not be debarred from proceeding subsequently to the university level, if they merit it.

There is also an important connection between intermediate and vocational training. Much vocational instruction is, in fact, given by intermediate-level technicians; and it is, therefore, essential that they are given a really clear insight into the needs and social background of those they are teaching. In many countries, intermediate training develops as an extension of the vocational, and there must therefore be a very flexible relationship between the two. Few countries have solved satisfactorily the problem of producing adequate intermediate staff in both numbers and quality.

Practical Aptitudes and Skills

The problem arises partly from a lack of appreciation of the wide range of skills required within the intermediate category. To say that a person has received 'intermediate training' is not very meaningful. He (or she) might have had three years' training, or one year, or less: he might have spent 60 per cent of his time in practical work, or 40 per cent, or virtually none: he might have taken a diploma at a higher-level institution, or obtained a certificate which was effectively an extension of his regular schooling. In all forms of intermediate training the emphasis should be on practical aptitudes and practical skills.

The technician must be capable and willing to undertake all types of practical work. He must be seen to be capable of carrying out practical tasks efficiently and with the appropriate degree of skill. The objective of middle-level agricultural education is certainly not to train and educate young persons solely to be managers. This they may become, but under no circumstances should they be trained with managerial status as the sole end in view. Many countries have attempted to train managers instead of practical men who are willing - indeed keen - to get their hands dirty! The result is that a vacuum is arising in the area of responsibility of the true technician - that between management and the skilled worker. This situation will limit the successful development of farming for many more years than developing countries can afford.

Not only must technicians be fully aware and be completely capable of demonstrating the practical skills required in the farm situation, they must also be aware of the scientific principles upon which correct practice is based. Only the possession of sound theoretical knowledge will provide the necessary confidence to do practical work without hesitation and in a way which will be an example to others. Furthermore, this theoretical knowledge will give the technician the essential ability to make correct judgements based on the known facts of a given situation. Clearly, such judgement will come primarily from experience in the practical situation, but the development of this ability is certainly an objective of middle-level education.

Well-Developed Powers of Observation

The technician will be a person who has well-developed powers of observation. It is accepted that such powers are inherent in some individuals and not in others, but this latent ability needs careful cultivation during the education process, for acute observation is so frequently necessary in the daily supervision of livestock, crops and indeed machinery and equipment. Equally important, of course, is the necessity to insist on a high standard to be set in attention to matters of detail. So frequently the success or failure of an enterprise rests on these two qualities of observation and attention to detail. Middle-level education should always seek a high standard in both.

The technician working in any industry, and it applies no less in farming, must show a dedicated interest in his work. This cannot be taught, although it can be cultivated. Some individuals are naturally gifted in looking after livestock, some have a mechanical turn of mind, yet others find satisfaction in tilling the soil. The good technician is required to show an interest in everything which makes the farm such a fascinating place on which to work.

The ability to communicate is most important for the technician. He must be able to understand what others with specialist qualifications and education are talking about. He must be able to interpret this information in practical terms. He must be able to pass on the information he receives to others for whom he is responsible or for whom the original information may be difficult to comprehend. In this way they will be able to take part in the experience which the technician could comprehend without difficulty.

Neglect of Women's Contribution

Here should be mentioned one area of intermediate agricultural education and training which has been seriously neglected in many countries up to the present, namely the contribution of women to agricultural change and development. Women made aware of the possibilities for improvement in their homes and family lives can be powerful agents of change in agriculture. This enormous potential is being increasingly recognized, but much conservatism still bars the way to equal educational opportunities for men and women.

Sense of Vocation

Those responsible for planning middle-level courses must foster in the future technician a sense of vocation. The design of the course and the approach to the student must be characterised by the philosophy that here is a career which is an end in itself and not a means to an end. Of course, some students will move out of the technician level, but this should be looked upon as the exception rather than the rule. The status of any position in farming (or elsewhere) is closely related to a large extent to financial rewards. This must be recognised and suitable rewards accepted by the industry as necessary to the maintenance of a good technician force in farming. But financial reward is not everything; there are other less tangible rewards to be found, the most important of which is the development in the mind of the technician of job satisfaction in farming which few, if any, other industries can match.

THE FUTURE OUTLOOK FOR AGRICULTURAL EDUCATION NEEDS IN INDUSTRIALIZED COUNTRIES

by
A. Simantov

An important aspect of the recent work of economists is the introduction of "knowledge" (education and research) to the theory of economic growth. The aims of education as well as its structures, its methods and the means at its disposal can be viewed as instruments of growth.

"Knowledge", however, is not only the cause of growth; it is also the consequence of economic and social development. Young people have a right to education. But what should be the content, level and importance of this education? Rapid economic development also raises problems regarding the quality of education.

With rising prosperity, a larger share of the national income is spent on education. Moreover, the development of an educational system is usually accompanied by the transformation of its structures, its programmes and its methods. Great disparities in the level of education are observed, not only between countries, but also between the regions or economic sectors of individual countries.

Thus, the educational system has an historical dimension, linked to the various stages of economic development, and a geographic dimension, linked to the national and cultural traditions of each society.

It should be noted that the ideas expressed in this article have been developed primarily with the European, industrialized societies in mind, but they may also be of interest to educationists in developing countries.

Agriculture in Europe in the 1980s

To discuss the requirements of agricultural education, it is necessary first to indicate the type of agriculture European countries are likely to have in the 1980s. The size of the agricultural sector, its internal and external organization, its methods of operation, depend upon the general economic situation of a country. Rapid economic growth will condition the development of agriculture. The agricultural economy will continue to free part of its resources for use in other sectors and, within agriculture itself, resources are likely to move away from field crop production to livestock production and to that of specialized crops.

Traditional-type farms can no longer mobilise the amounts of capital modern agriculture requires if the "technological gap" between agriculture and the other sectors is not to widen. Moreover - given the relatively slow growing market for food in industrialized societies - if the advantages offered by the economies of scale are to be shared by agriculture, the number of farm units must diminish drastically.

It is possible to anticipate that if in twenty years' time per capita incomes in any of the European countries are doubled (this implies a 3.5 per cent annual compound rate of increase), the share of agriculture in the national income will be halved, as will the active agricultural population. Production per farm worker will be almost three times larger than at present; and the inputs per farm worker will be at least four times their present level.

Implied in the above prospect is that average farm sizes will double; that agriculture will become increasingly capital intensive; that returns to capital will be even more important than returns to labour in the definition of the viable farm; and that agriculture will continue to be under heavy pressure to rationalise and to operate efficiently if farm incomes are not to fall behind farmers' expectations and the level of incomes in other sectors of the economy.

European farms of the 1980s will have a higher degree of specialization that at present. This will allow for a more effective use of resources and techniques, in spite of the fact that specialization often results in increased risk to the individual producer.

Concentration of decision making is another important factor associated with economic growth. This phenomenon already applies to agri-business - farm supplies, processing, etc. In contrast, farming is still characterised by a large number of points where individuals make decisions which are not uniform and may be conflicting. If farmers are to achieve a competitive position within the national economy, the "family farm" of the future will have to gradually yield its responsibilities for independent decision-making to a mechanism for group decisions.

Qualitative Requirements for Agricultural Education

Those who normally go through the agricultural education system will become farmers, farm managers, farm advisers, educators, researchers, leaders in the agri-business complex, civil service administrators, journalists, etc. The range of possible occupations is quite broad. The type and level of education they need will vary but in all cases the level required in the 1980s is likely to be far higher than at present; the numbers to be trained are also likely to be greater than at present in spite of the fact that agriculture is a relatively declining sector of the economy. It should be noted that the share of the agri-business complex in the economy is not declining as fast as the share of agriculture itself.

Irrespective of the specific training they are going to receive, students of "agriculture" will need to have general education of a high standard and comparable to that av available to the urban population. They will need to be open to change, fully aware of modern technologies, adaptable, cooperative in outlook and capable of combining specialized training with the wider perspectives of a general education.

Adaptability to comparatively rapid change will be essential on account of the fast development of the industrialized economies. A 4 per cent per capita growth at low levels of development implies a smaller absolute change to the individual than at higher levels of development.

Geographic and professional mobility are essential if advantage is to be taken of the possibilities offered by society. People should be trained in such a way that they are capable of moving from one "agricultural" occupation to another - or if necessary, to another occupation.

Readiness to cooperate is essential both for the farmer and the agricultural technician or administrator. Although the farm unit of the 1980s is still likely to be a family farm, the farm operator will no longer be capable of running his business in isolation. Cooperation is equally necessary, of course, for scientists and administrators.

As regards "agricultural education" in the stricter sense, there is need to increase the content of the economic and social sciences in the curricula of all educational institutions at every level. Several developments justify this change. First, agriculture is no longer a sector concerned exclusively with the production of goods: with production tending to outstrip demand (to an increasing extent), marketing is already becoming more important than production. Second, the size of operation of a farm or an enterprise in the agri-business complex is going to require increased capital, and the ratio between capital costs and family labour costs is likely to increase sharply. These two factors are sufficient to indicate why management in the broad sense will become of paramount importance.

Management includes not only farm management or management of industrial enterprises, but also recognition of inter-relationships between what happens on a farm and in an enterprise, and their relationship with other aspects of economic and social life. Knowledge of legal affairs, banking and similar disciplines will become an indispensable complement to the training offered in agriculture.

At the present time, educational systems for agriculture are still oriented largely towards food production on the farm. In the 1980s, other sources of food will become increasingly important; the services sector will likely require more agricultural graduates than at present. When the majority of small farms has disappeared as a result of amalgamation and the retirement of their cultivators, there will be little justification for a separate educational system for agriculture at the lower level. Lower secondary or vocational education will no longer be sufficient for the farmer or the farm worker of tomorrow. The farmer will need to be a manager and the farm worker a well-qualified technician who will be entrusted with expensive equipment or valuable livestock.

Quantitative Requirements for Agricultural Education

There is the general proposition that the requirement in trained manpower at all levels is very closely related to the level of economic and social developments of a country. The more a country is developed, the greater the number of technical and scientific personnel required. It is characteristic of the development of the "technological society" that the number of scientists and technicians tends to grow in relation to total labour force, as well as in absolute figures.

Programming educational requirements is a delicate and complex operation. The methodology still needs refinement and the main difficulty encountered lies in the inadequacy of the existing statistics. Few countries have accurate statistics on the numbers of agricultural graduates and technicians, their distribution by branch of activity, by type of organization, by age, etc.; such information is needed both for agriculture in the narrow sense and for the agri-business complex. Availability of such statistics and programming operations should ensure that the allocation of resources as between the various levels of education and also within each level corresponds to prospective requirements. There is evidence, for example, that in some European countries, too many resources have gone into the training of agricultural scientists and too little into the training of farm managers and highly qualified technicians.

It cannot be estimated with any precision how many farmers a country will require, how many agricultural administrators, farm journalists, agronomists, marketing specialists, etc. But it is relatively easy to establish orders of magnitude for all these categories, based on an intelligent interpretation of a country's economic and agricultural long-term policy and on the experience of the more advanced countries. The latter are experiencing today the situation which other countries are likely to experience in the years to come.

Educational systems must be constantly evolving. They should precede developments and prepare people for new situations, both technically and psychologically; the should not follow in the wake of developments. Education should be a constant process throughout the active life of individuals if they do not want to lag behind in sharing the general well-being.

Developing Countries

To end by a brief reference to countries in the process of development. The educational system in many developing countries has been taken almost unchanged from industrialised countries, without paying enough attention to questions concerning an essentially rural environment. Such a system has contributed to a large number of youth leaving their rural surroundings, thus complicating the income problem in societies which until the end of this century will still occupy some four-fifths of their population in agriculture. It is important to give rural youth equal chances in education; to make experiments in teaching agriculture to people who have not received other forms of education; to introduce vocational training in regular school programmes and to help the most promising pupils to pursue more advanced studies so as to be able to play a leading part in the economic and social transformation of the countryside.

Nothing short of a new and prodigious effort utilising all forms of education - formal and non-formal - will enable the rural economies of the developing world to "take off". And this must be accompanied, of course, by complementary action in the economic and social fields, both within countries and at an international level.

TRAINING IN COMMUNICATION FOR RURAL DEVELOPMENT PERSONNEL

by

Juan Díaz Bordenave

Rural development has many ingredients. Some of them are of a material nature, such as inputs and products, machinery, silos and roads. Its key ingredient, however, is the human agent: his willingness to change and progress, his knowledge of what to do, and his persistent individual and group action. We may rightly say that millions of positive and intelligent individual and group decisions are the true 'motor' of development.

If individual and group decisions are so basic, the role of development personnel appears clear: to inspire, orient and facilitate the taking of the right decisions at the right time. And how can this be done? Development personnel can influence decisions of the population in many ways:

- helping them to research their situation so as to become aware of its short-comings and potentials;
- helping them to develop their problem-solving skills by training;
- demonstrating the advantages of new ways of doing things, as developed by science and technology;
- orienting their efforts through fiscal incentives, resource allocation, legislation, etc.;
- building a favourable infrastructure of prices, markets, roads, storage, input supply, etc.;
- keeping them well informed of all the facts needed to make decisions (price and market information, weather reports, harvest forecasts).

A look at this rather incomplete list makes the importance of adequate communication training for rural development personnel seem obvious. Indeed, if we except the creation of a favourable production and marketing infrastructure, all the rest in development promotion appears to consist in understanding, consulting and cooperating with the rural population. In other words, communicating with them.

Probably for this very reason the analysis of success and failure of rural development programmes often centres on the identification of communication breakthroughs or communication breakdowns. Therefore, in order to propose new approaches for training in communication for rural development personnel, we should first take a look at how communication has been handled by them all these years.

One-Sided Versus Balanced Communication Orientation

Let us call "communication orientation" the way the various elements of the communication process are treated by the personnel in charge of the rural development programme. The following typology may help us identify the negative consequences of overemphasising a single element of the process instead of adopting a global and balanced approach in which all the elements are taken into consideration.

		Negative Consequences
(a)	**Content Orientation**	
	The central goal is to communicate something considered highly valuable. So as to respect the sacred integrity of the content (such as the results of a scientific research study), a large array of substantiating data is put together, the scientific validity and technical accuracy of concepts and words are checked, and the content is finally transmitted to a few selected individuals.	The messages are so dense and detailed that they become obscure and dull. A great deal of information, potentially useful for many, is not released. Many problems of the farmers are left unsolved.
(b)	**Code Orientation**	
	Emphasis is placed on the presentation of the material in grammatically correct terms, precise technical words, artistic images and perfect graphic symbols.	The receivers' own codes are often ignored, the messages are technically correct but not understood; very little attention is given to feedback from the receivers. The agent is so convinced that "he said it right" that it would shock him to know that he was totally misunderstood.
(c)	**Means Orientation**	
	The main concern is to use the right channels, the most powerful media, to carry messages rapidly and efficiently to vast numbers of people. Personnel strive to use the latest gadgets ("hardware") and love to organize multi-media campaigns including posters, leaflets, radio, newspapers, even television. Media virtuosity is rampant.	Relevance and accuracy of the content is underplayed. Receivers' needs are only superficially studied and real problems are not tackled by the messages. The craze for gadgets and hardware blinds the agents to the more subtle human aspects of dialogue and interaction.
(d)	**Source Orientation**	
	The agents and their institutions are the "big thing"; they are the message. Pages and pages are filled with what the Director thinks, says and does. An individual agent can also be "source oriented" when he uses his moral authority and personal sympathy as persuasive tools. Or when he over-values his own wisdom and avoids dialogue because "he has nothing to learn from the natives".	The receiver is seen simply as a means to an end - the prestige of the source. Communication becomes directive and autocratic.
(e)	**Receiver Orientation**	
	Attention is so concentrated on helping the people that personnel lose their cool heads and ignore the proper technical requirements for programme planning and the right use of message and media. (We don't have to worry about this excess, though. It seldom occurs).	Initially proceeding with a great deal of idealism and good will at the receivers' service, the programme may end up being utterly paternalistic and inefficient in its communication.

(f)	Effect Orientation	Negative Consequences
	Personnel, under the pressure of an ambitious development plan, are so eager to achieve results in terms of production increases, quotas fulfilled, practices adopted, habit changes, that they equate communication with persuasion and apply hard-sell methods of commercial advertising to what should be considered an educational task.	The receiver is considered nothing more than a production agent. He is to be persuaded at all costs to adopt the innovations recommended by the technicians. Communication becomes a one-way channel of promotional appeals and technical instruction. The human and social aspects of the receivers' lives are not included in the cost/benefit calculations of the effect-crazy technocrats. If they are, it is only in order to know "where to hit 'em", like in advertising "motivation research". Any real dialogue is impossible in these conditions.

Each one of these "orientations" was prevalent in the past during a certain period, at least in Latin America, and some are still adopted today. When the "means orientation" was predominant, for instance, the developing countries were flooded with expensive audio-visual equipment and materials, along with the experts to run them. This 'hardware' was seen as a panacea for illiteracy, malnutrition, disease and agricultural backwardness. Many times the audio-visual materials were utilized as if they could carry the message by themselves, without being an organic part of a more complex and patient pedagogical strategy, involving also inter-personal contact and dialogue.

The Alternative: A Problem-Solving, Pedagogical Approach

If rural development personnel are to avoid the one-sided, superficial and manipulative communication orientations described above, they should be trained in a different way. An approach that takes into account not only the different elements of the communication process (content, codes, means, source, receiver, effects), but also the inter-related nature of communication in relation to the institutions involved in problem-solving with the rural population. The approach should also give due recognition to the human condition of the receivers and their learning prerequisites

The Problem-Solving System: Let us start by imagining a group of farmers who live in a certain community. Let us suppose that they become aware of the existence of certain problems which limit their well-being. As an illustration, let's say that they discover that the available land is insufficient for their needs, or that crop yields are too low. What do they usually do?

a) Initially, they would appeal to their own local resources. They compare alternative solutions and deliberate about their possible outcome and cost. They try out the solution they consider most feasible and evaluate its results. Eventually, some of the problems are solved. (We may see here that a key function of communication is to contribute to community deliberation and problem-solving).

b) Some problems, however, are not solved. Local resources are not sufficient. Normally, a search for external help is then undertaken through an appeal to agencies that may handle the problem 1/. Sometimes these agencies have a local representative (extension agent, bank manager, soil conservation supervisor, etc.) who acts as a link and as a vehicle of the appeal for help.

1/ It is true that many backward communities, even after perceiving a problem, do nothing to secure external help if local resources prove incapable of solving them. This fact justifies the use of methods of "conscientization" or "incitation", described by P. Chantran in his book "La Vulgarisation agricole en Afrique et à Madagascar", G.-P. Maisonneuve et Larose, Paris, 1972.

Within the service agency, a similar problem-solving routine is followed (see Fig. 1). Eventually, the agency's resources are mobilized and the problem of the community is solved. The solution is then communicated to the community.

c) Sometimes the agency will not be able to produce a solution and therefore will act only as an intermediary between the community and a solution centre which may be a Ministry or a research institution. The solution achieved by the centre is communicated to the intermediary agency which diffuses it to the community. (In some cases, the solution is communicated directly by the solution centre to the community).

These three possible processes are then an organic part of a problem-solving system in which the local community, the intermediary services and the solution centres are triggered by a problem experienced by the local community 1/.

It is obvious that the problem-solving process can happen in various other sequences. For instance, the solution centre may discover a new technique or product and send a report to the relevant service agency which then persuades the local community to adopt the innovation. There is nothing technically wrong with this latter sequence. However, the lack of initial participation and involvement of the community in problem definition and articulation may contribute to perpetuating the dependency of the rural population on outside matters.

The Role of Communication

In the diagram of the problem-solving system we observe several important functions of communication which are, however, frequently overlooked.

a) Articulation of the problem at the local level and its presentation to the outside agencies (via local linkage or by direct contact).

b) Internal flow of the search for solution and decision-taking within the intermediary "service" agency.

c) Delivery of help (solution) to the local community.

d) Articulation of the problem by the intermediary agency and its presentation to the solution centres.

e) Internal flow of research and decision-taking within the solution centre.

f) Communication of solution to the intermediary agency and/or the local community.

1/ This looks quite simple and easy on paper but all kinds of barriers hinder the problem-solving process, particularly when it involves "conscientization" of the local communities about their real situation. The mere possibility that hundreds of thousands of landless farm workers of latifundia begin to question their landlessness and misery compared with the impressive wealth of their landlords, may be considered subversive. Moreover, there is a strong tendency in many countries to give the government a monopoly of planning initiative. Local communities are not stimulated to do their own planning for solving their problems but are expected to wait for the official plan which they will be ordered to execute. In other words, there is a vertical one-way direction of communication, with minimal feedback.

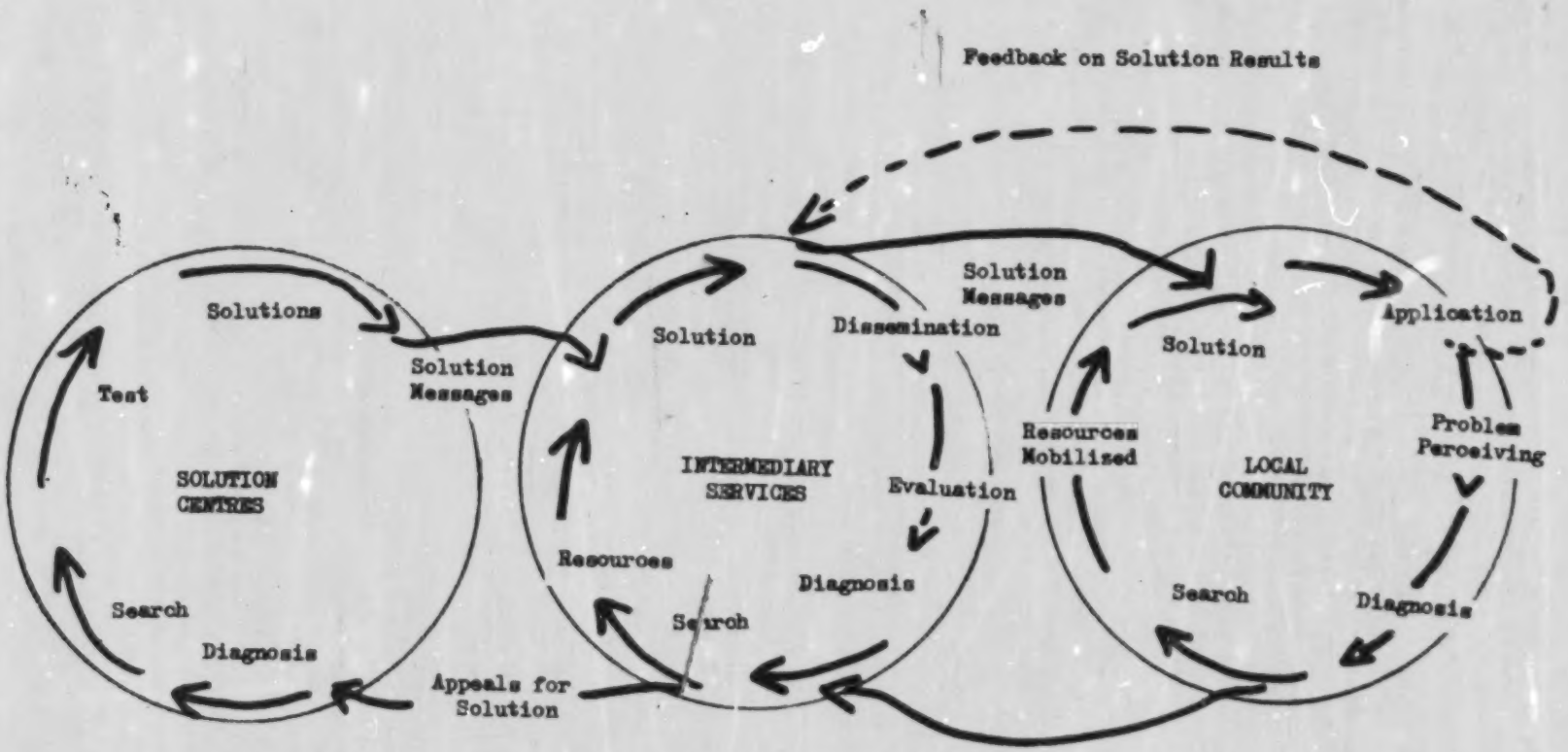

Fig. 1: A Problem-Saving Device

(Adapted from Ronald Havelock, "Planning for Innovation through Dissemination and Utilization of Knowledge", Institute for Social Research, The University of Michigan, Ann Arbor, Michigan, 1970)

g) Mutual feedback and consultation during the whole process, among the three sub-systems working for solutions to the problem.

These functions give us clear guidelines for communication training. Not only should rural development personnel be trained to make these flows more efficient, but the local community should also be trained to articulate and communicate their problems. More specifically, the training objectives for the groups involved in the system would be:

1) for the local community:

- to increase the rural population's awareness of their structural situation and its causes, as well as of their cultural deprivation and their social marginality;
- to acquire communication skills that will enable them to discuss, organize and make their aspirations and opinions known to the rest of the population, particularly to the leaders whose decisions are crucial;
- to acquire communication skills to participate effectively in the successive stages of the development planning process: analysis of reality, definition of objectives and guidelines; writing and diffusing the plan; execution; control and evaluation;
- to enable them to pass on to others the technical knowledge and skills they have acquired, so as to make the transfer of technology a massive grass-root process. This grass-root transfer of information and technology is the key to genuine rural development, particularly for those countries lacking the financial means to recruit sufficient professional change agents.

2) for rural development personnel:

- to learn how to conduct a dialogue with the people in a more democratic way, avoiding paternalism and persuasive propaganda;
- to acquire communication skills for transmitting to superiors and to solution centres the problems, needs and aspirations of the people;
- to devise efficient institutional mechanisms for communication flow and feedback;
- to perceive and analyse problems within a larger context than the merely technical or even economic;
- to present the solutions to the people in a form that at the same time contribute to an increase of knowledge and an increase of thinking and deciding ability.

The Pedagogical Approach

When discussing communication orientations, we regretted the lack of validity of the approaches with a one-sided, somewhat mechanistic manipulation of communication elements. What do we propose instead?

1. The proposed approach for rural development would be based on a value system in which human growth is more essential than economic profit and technological advance, in so far as the last two goals are considered only two of the means to achieve the more basic goal of human growth and enrichment. This general statement is very important in order to counter the philosophy of development which would sacrifice even human freedom and dignity on the altar of economic and technological development. Granted that the technocrats' credo produces very successful results in the short run, we believe that in the long run it causes decadence and oppression.

Therefore, even when we are trying to promote production and productivity increases through technology transfer, we should use a method of approach that ensures the receivers grow as human beings as well as improving their production skills. That pedagogy should not be of the type that Paulo Freire calls "banking education" in which the teacher's knowledge and experience are "deposited" in a passive student's head by means of autocratic and non-participatory methods. The new pedagogy should combine the teaching of content (ideas, techniques), with the stimulation of the receiver's ability to think, judge, criticise and take free decisions. This pedagogy also should include the teaching of values: freedom, human dignity, cooperation, truthfulness, justice, etc. without which mere "technification" may lead to disaster.

2. As to the applications of this pedagogical approach, i.e. the training methods, they should follow closely the way of perceiving, learning and changing which is characteristic of rural people. They should then be based on the psychological principles of motivation, perception, reasoning and remembering as applied to people whose lives make them somewhat different from city inhabitants. And what do these principles tell us? Here is what Charles Maguerez 1/ answers:

"As all the techniques, agricultural techniques are part of an experimental science. Therefore, we should transmit those techniques following the same type of reasoning which led to their development. It's necessary that the reasoning scheme be translated into a simple and clear pedagogical principle, easily applicable by the technicians in charge of diffusing the assistance in the rural areas."

Charles Maguerez 2/ calls this pedagogical principle "the method of the arc" and it has five phases:

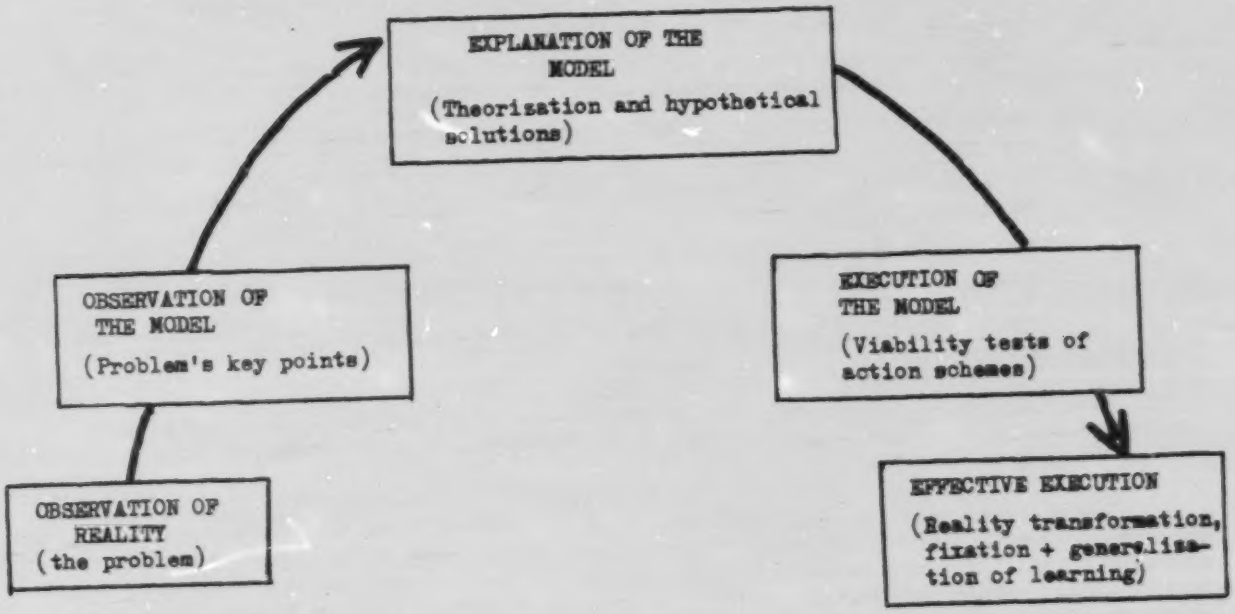

Fig. 2: Scheme of the Method of the Arc

1/ Technician of France's "Société de Aid Technique et Commercial" (SATEC).

2/ Adapted from Charles Maguerez, Report to the Coordenadoria de Assistencia Técnica Integral da Secretaria de Agricultura do Estado de São Paulo. SATEC, Paris, France, 1970.

Learning Phases

1. The first phase the "observation of reality", consists in the consideration of all aspects of the problem and identifying the most important measures to contribute to their solution.

2. The second phase "observation of the model", will consist in the elaboration of a summary of this reality, a summary which should be oriented by the choice of the aspects and characteristics most important for the solution of the problem.

3. In the third phase "explanation of the model", the problem will be analyzed theoretically in its main components and lines, always focusing on the actions likely to modify the characteristic aspects evaluated in the second phase.

4. The fourth phase "execution of the model" will consist of a confrontation between the action scheme emerging from the third phase and the data summarized and organized in the "model" (2nd phase).

5. Finally, the fifth phase "effective execution", will be the application to reality of the action scheme previously designed and tested against the model (with eventual modifications due to the test).

This final stage also witnesses an effort for fixation of what has been learned and of generalization of the learning to other situations.

Backstopping Services Needed

A whole backstopping service should be built by the rural development agency to back up the use of the arc method by its field personnel after being duly trained.

For each local problem, for instance, the technicians can: (a) prepare the questions that will guide the observation of reality; (b) propose the type of model to be constructed on the basis of the observation; (c) search for theoretical explanations of the problem that could be understood by the farmers; (d) suggest the terms of comparison between the solutions proposed and the model; (e) foresee the alternative action schemes that the farmers may choose, in order to think of the infrastructure needed to facilitate their execution. Above all, they will be concerned to establish a feedback system through which they can be in touch with the farmers' growth in understanding and the application of new action programmes.

The "method of the arc" also furnishes a functional basis to choose methods and materials for each of its stages. For instance, instead of considering visual aids only as a tool for reinforcing the transmission of information, they can be used to facilitate the observation of reality, the building of models and the discussion of the elements of the relationships involved.

Summary and Conclusions

This article considers individual and group decision-making the real 'motor' of development and grafts on to this belief the importance of communication training for rural development personnel. Communication, however, can be woefully misused if only a single element of the process is over-emphasized, instead of applying a more global and systematic approach. Positive and negative consequences will depend on the dominant "communication orientation".

To avoid one-sided communication orientations, a model is proposed that combines the two fundamental goals of rural development: the growth of people as human beings and the solving of their problems.

The solution of problems is attempted through training personnel of three related sub-systems: the local community, the intermediary services, and the solution centres. Growth as human beings is guaranteed by the adoption of a philosophy and pedagogic approach described in the article.

The author recognises that the application of these ideas faces serious political barriers in the developing countries that have not yet modified traditional social structures where the rural masses are heavily underprivileged. Many countries of the world, however, are taking, or are ready to take, a national decision for general human growth and liberation. To those countries this article is dedicated.

THE FINANCING OF AGRICULTURAL EDUCATION

by

A.G. Apodaca

There is increasing public acceptance of the fact that education is an essential part of the development process. In fact, too much is expected from the educational system, for education has come to be regarded as the answer to poverty and deprivation and by many has been translated as the surest way into a comfortable life, usually as a government employee. In any case, in most developing countries there is a heavy demand, especially from students and their parents, for more educational facilities. Schools of all types are being built, sometimes without due regard to the country's real needs or its possibilities. On the whole, vocational and technical education and training, especially at the middle level, have been neglected; on the other hand, higher education, which has political and prestige appeal, has done quite well in most of the less-developed countries and has been over-emphasized in some. Agricultural education and training have also been neglected although the economies of most of the less-developed countries are based on agriculture, thereby providing proof of the many pressures to which national development plans are subjected. The impact of agricultural education projects on production may be felt only after a long period of time and cannot compete against the many other demands being made on the limited resources of most developing countries.

Meagre Resources and Gigantic Needs

All this is important to the financing institutions which seek to become involved only in the soundest of projects and those with highest priorities. Much depends, of course, upon the views and feelings of the country authorities, who must reach the final decisions, and the financing institutions must remain objective, acting only as non-political advisers. But there is usually a tug-of-war by the various interests within a country over the use that is to be made of existing funds, and the financing institutions exert additional pressures of their own. Most specialists are naturally biased in favour of their own particular fields; an agricultural educator working in a country whose economy is based upon agriculture is logically tempted to propose that a large amount of the national budget be spent in training agricultural personnel first of all. But the developing countries have meagre resources and gigantic needs - in other educational fields, in health, in emerging industries, in power supplies, etc. The question becomes one of identifying those projects likely to have greatest impact on development as a whole. In the resulting national plan, although agricultural education may be confined to one or two key actions, if implemented at the proper moment, these can have a tremendous impact, whereas a large project could have the effect of holding back overall development.

Proper Planning Required

The most sensible type of project in agricultural education is one that helps in setting up the education and training mechanisms that will produce the manpower required for agricultural development. This is stepping out into the unknown because few of the countries that need financial assistance have adequate manpower and similar basic data or the systems for acquiring it. Often the present output of a country's education and

training system is unknown and it is difficult to assess the degree of agricultural development for the ensuing ten-year period. Such an estimate is essential, however, if education and training programmes are to be oriented in a way that the numbers and types of technicians are in line with the probable needs, and misguided policies avoided, for example, those producing surplus agricultural engineers while the intermediate technicians remain in short supply. With proper planning, the technicians required for staffing various development projects can be trained in advance. In a sense, the existence of a project in agricultural education and training serves to bring about a review of the country's needs in this special field and produces an awakened interest in better educational planning.

External Financing may do a Disservice

Many of the smaller developing countries cannot afford a project solely devoted to agricultural education and training so that external technical and financial organisations may be doing them a disservice by recommending one. In addition, educational projects carry with them high rates of commitment to recurrent expenditure by the government, mostly in the salaries for teaching staff and administrators and, in some cases, for boarding, transport or demonstration facilities. One possibility is to experiment with some innovation that could solve a particular problem, such as farmer training on a broad scale and at little expense. But experimentation is neither wise nor acceptable to the country when its limited resources are to be put into untried systems or methods which may help solve the problem but which may also fail completely. Still, the financing of education has begun to take new forms away from the construction of buildings and the supply of equipment. There is now interest in financing other types of educational programmes directly associated with development; and this presents new problems.

Concern for the Quality of Rural Living

There is a growing demand in developing countries for improvements in the quality of rural living, thereby reducing excessive migration to the urban centres, with its accompanying ill effects. Agricultural educators have been examining the social aspects of education and training systems which include, in addition to the learning experience, other benefits through community development, cooperatives and farmers' associations, home improvement programmes, small agricultural industries and youth activities. Some projects have added health education and training, including the training of midwives and nurses. More elaborate agricultural processing plants and other organised services to agriculture which create employment in the area are being proposed. Water supplies, electrification, drainage, sewage disposal and all the facilities associated with improved living, are being given more emphasis. Improved housing and recreational considerations, especially those likely to bring tourist revenue to rural communities, may be next.

There is now wider recognition of the fact that rural-urban migration is fostered by lack of opportunities for gainful, non-agricultural employment, inadequate educational and recreational facilities and poor living conditions. Anything that can be done to improve these facilities will reduce the rural exodus.

The FAO/IBRD Cooperative Programme's norms regarding projects are being revised to accommodate these broader concepts of the quality of rural life. Financing is more difficult when a project involves many small, although interrelated items, and subsequent supervision is also highly complicated and costly. There will be a mixture of project items, some for agricultural production (for which a rate of return can be calculated) and others which are socially essential, such as educational programmes which have to be prepared on a different basis.

Types of Broad Projects

There are several types of broad projects with significant education and training components that may be requested by developing countries, such as:

(a) the usual agricultural projects, and even land consolidation programmes, tied to farmers associations, with emphasis on human development;

(b) rural development centres: the combination of agricultural extension and training centres for the entire farm family in areas of scattered population, leading to the establishment of settlers' communities;

(c) rural service centres: agricultural extension and training, with primary school, agricultural supply and health services for new areas of spontaneous settlement;

(d) rural comprehensive schools which bring the lower cycle of secondary education to rural zones, integrating and improving the existing primary schools in their catchment areas. Leadership, literacy and agricultural training are included and even accelerated primary education for adults as well as mobile units for community development, functional literacy, farm craft training, etc.;

(e) rural training centres in which farm families receive training in agricultural and agriculturally-related skills such as farm mechanics, processing of agricultural products, farm accounting, farm construction, irrigation equipment, farm machinery repair, etc.

(f) Supervised vocational agriculture training in which selected secondary school students are grouped in an organization and taught agriculture on their own project and on their families' farms, with credit and technical assistance provided;

(g) youth projects in agriculture where credit is provided for a club to run an agricultural enterprise under the guidance of a technician; they learn agriculture and cooperation, while making money in the enjoyable company of their contemporaries in a rural environment;

(h) rural leadership training through radio ocrrespondence courses following the system developed by Radio Sutatensa in Colombia. Eventually, this may link with television instruction by satellite in the largest countries;

(i) training in management and organization for administrative personnel in departments within ministries of agriculture, in addition to the more usual type of technician training to improve the handling of the development projects.

There are many similar ideas that will be put forth; they are somewhat innovative and have certain things in common:

(i) They are difficult to make into acceptable projects for financing.

(ii) They emphasize the human factor, the production base and self-reliance of the people.

(iii) They are more in line with the present trend of thinking in UN member countries.

(iv) They require expertise in various fields.

New Criteria

Financing institutions will now begin to consider again these types of project which, due to their former criteria, they have had to reject; the proposals will embody the same ideas that were presented several years ago, but within new contexts. This modification in lending procedures has taken a long time; but it now brings the World Bank, for example, into a highly specialised field which seems closer to its original concept of "development". The inclusion of social elements with no immediate economic return in projects that produce more direct income will constitute an improvement and bring about a more lasting benefit to the people of developing countries.

The demand for broader projects now coming to the fore in developing countries which combine agricultural production, agro-industries and infrastructure, and which emphasise the social aspects related to improvement in the quality of rural life, require (and are getting) a new approach. The rural educationist will have to adopt much wider perspectives, but the results should be more interesting and satisfying to all concerned.

TRADITIONAL AGRICULTURE AND EXTENSION: SOME REFLECTIONS

by

S.Z. Moczarski

There are many theories, techniques, and even a whole philosophy of agricultural extension, which attempt to regulate, streamline and standardise the extension approach in order to provide a recipe for success. Most of them work and are applicable to one country or another, but none can be taken as standard for all the conditions everywhere, or even for similar situations in different countries with different people. Fortunately, more and more attention is lately being paid to the basic human factor in planning extension approaches and one sees less of the previously prevalent patronising attitude of government officials who profess to know best what is good for the farmer and try to make him "happy", often against the latter's wish or in spite of his passive opposition. The farmer's attitudes are determined by the local situation and the accumulation of years of experience, and usually have a sound basis. Thorough examination of the local situation and study of the life of a particular community appear, therefore, to be the essential prerequisites to the planning of any extension activity. In many cases this is overlooked.

Ethiopia - Particularity about Tasks

A manager of a cotton plantation in the Awash Valley of Ethiopia once complained that the local Afars (Danakils), who are basically a nomadic tribe, will, even when settled, only perform certain kinds of farm work and would rather leave employment, or - if farming on their own land - hire labour from other tribes, than carry out those jobs. Among the tasks mentioned were some which the Afars considered as below their dignity to perform. Here, either a patient education programme or the mechanization of these operations might provide a solution. However, there was one task which the Afars considered too hard for them to carry out - surprisingly, this was weeding. The Highlanders, who did most of the agricultural work in that part of Ethiopia, used short-handled hoes for weeding and could work for hours in a bent or stooping position. The Afars, who for centuries have walked the Danakil desert with a stick or a rifle across their shoulders, searching for pasture for their herds of cattle and flocks of sheep, are accustomed to the upright position. Stooping or bending for any length of time is harder for them than walking for hours through the desert in the full heat of the sun.

However, a trial with long-handled Dutch type of hoe, in place of the traditional one, soon showed that the same Afars were able and quite willing to put in a day's work weeding, providing they could do it standing upright.

Yemen - Eagerness of Emigrants

The farms of Yemeni farmers who have emigrated to Ethiopia strike a considerable contrast with the farms of the locally settled Afars, and even with those run by Ethiopian Highlanders farming in the delta of the Awash river. The Yemeni farms are usually carefully cultivated, the crops well weeded and irrigated, and the Yemeni settlers are ready to take advantage of the crop spraying or anything else which might be provided by the extension service. This eagerness is beyond what one would normally expect of a newly-settled foreigner trying to make a living in strange surroundings. The reasons behind this enterprise and diligence become clear, however, when one crosses the Red Sea to work with Yemeni farmers in their own country.

The geographical position of the Yemen, the mountainous character of the areas with a climate more favourable to farming, and the general scarcity of agricultural land, make farming an even harder struggle than in many other countries. For centuries the Yemeni farmers have been contending with nature for every morsel of land, building and maintaining with their own hands terraces carved out of steep mountain slopes - often little more than a few feet wide. They have to fight wind and water erosion trying to take precious soil away, as well as often having to contend with the landlords taking the lion's share of their hard-won crops; sometimes they have to cope with bandits trying to commandeer the produce of their meagre plots. Although some of it is past history, a large proportion of farmers are still carrying on this struggle. As a result, the Yemen has produced a breed of farmer who will do all in his power not to waste an inch of land.

Weeds are seldom seen on Yemeni farms; the crops are well planted and tended. The cattle, and especially the work oxen, are hand-fed with food prepared in little bundles ('sandwiches') and pushed into their mouths so that nothing is wasted. These farmers recognize their main problems and deal with them to the best of their ability. They have been using compound sweepings and any available manure for their crops, but when they come into contact with fertilizers, they do not hesitate to give them a trial. There have even been cases where farmers on whose land fertilizer trials have been sited, noticing the difference in the growth of the crop on the treated plots compared with the control plots, purchased, on their own initiative, a similar fertilizer. This they applied to the control plots and the rest of the field around the trial. While attempting to control pests and diseases of crops by traditional methods, as soon as they hear of insecticides, they are prepared to try them as well. They are, in fact, very receptive to new ideas.

This very receptiveness places a great responsibility on the shoulders of extension workers. Enthusiasm which is easily aroused but not immediately satisfied may turn into disappointment and even bitterness and apathy.

Anxiety for Quick Results

Anxious for quick results, foreign experts working in a country for a limited period (or government officials activated by political considerations) frequently try to apply experience and results obtained from other areas or countries without confirming them by trials on local farms. Later, they are often surprised and disappointed when their programmes are not accepted by the farmers with equal enthusiasm. Usually, it is the farmer who is blamed for being unreceptive, suspicious or lazy. Close examination of the local situation will disclose in most cases, however, that the suggested innovation was not quite what the farmers needed. Perhaps it did not solve their particular problem, or was too difficult or expensive in time and money to be adapted harmoniously to their present system. Perhaps it was not properly presented to the farmers, so that they could clearly perceive its advantages.

In a country such as the Yemen Arab Republic where farmers until very recently have had little contact with extension workers - and for that matter with any agriculturists from whom they could obtain sound advice - it is most important that any attempts to guide them should be meticulously planned in advance and based on sound experimental results obtained in the same conditions as those in which they will be applied by the farmers. Yemeni farmers have behind them centuries of accumulated experience and tradition of careful husbandry. As a result, they have worked out a farming system which, whatever its shortcomings in relation to modern science and methods, is well adapted to their particular situation. Undue haste in trying to change the existing agricultural pattern may easily end in disaster and slow down progress instead of accelerating it. Moreover, it will erode the existing fund of goodwill and desire on the part of the agricultural community to improve their lot, as well as their trust in newcomers who profess to know the answers to their main problems.

It is most important, therefore, that extension workers and development planners look closely at their own motives in generating their programmes to ensure that the desire for rapid and spectacular results is not clouding their judgement, and that the recommendations are sound ones with a locally valid applicability.

RELATIONSHIP BETWEEN NATIONAL AGRICULTURAL POLICIES AND AGRICULTURAL EDUCATION AND TRAINING*

by

G. Cameron Clark

Educational institutions are notorious for their conservatism and resistance to change. This is perhaps understandable, as they are the moulders of society and are charged with much of the responsibility for perpetuating its values. However, society is being forced to change - particularly the rural and agricultural society - and the question is whether agricultural education and training institutions are facilitating or hindering the process. Government policy on agricultural development provides the guidelines for this change to take place.

The extent to which national agricultural policy should closely affect the content and methods of agricultural education and training may be determined by the answers to the following questions:

1. Does the national policy emphasize only production or does it give due attention to integrated rural development and quality of life? If production, then the schools and colleges can continue much as in the past, but if balanced rural development is desired then much greater emphasis must surely be given to the social sciences in curriculum development.

2. Does the agricultural policy tend to favour the big commercial farmers, or the small "family" farmers or tenants?; irrigated or upland agriculture? labour or capital intensive production methods?; specialization or diversification in farming? In the past, many schools and colleges, in attempting to maintain "international" standards, have tended to equate modern farming with large scale, mechanized farming, which thereby becomes the model for their students. It is hardly surprising, therefore, that they have emerged ill-prepared to tackle even the technical problems, let alone the economic and social problems of the small farmers, tenants and landless agricultural labourers.

3. Is the agricultural policy conducive to involvement of the farmers in local planning and the growth of cooperatives and farmer-controlled organizations? If so, agricultural education and training institutions must give much greater emphasis to rural leadership development, group dynamics, cooperative education and rural sociology in the formation of agricultural personnel at both the field and supervisory levels.

---

* Based on a paper prepared for the Seminar on Agricultural Policy and Agricultural Education in Bangladesh (Bangladesh Agricultural University, Mymensingh, 5-7 August 1972).

4. In the light of population and employment problems, does the national policy facilitate or encourage rural youth to find their place in the agricultural community? Does the policy consider the need to develop positive attitudes towards farming among primary school teachers and their pupils? If so, the training of agricultural staff in the psychology and methodology of rural youth work becomes essential.

5. Does the production and utilization of nutritive foods form a part of the national agricultural policy? If so, it is desirable that some basic nutrition education be included in the pre-service education and training of all agricultural staff. And what about the 50 per cent of the rural population - the women?

6. In view of the rapid changes and advances in agricultural technology, does the agricultural policy provide regular periods of in-service training for extension workers and teachers of agriculture?

A National System for Agricultural Education and Training

The World Conference on Agricultural Education and Training, organized by FAO in collaboration with Unesco and ILO, held in Copenhagen in July/August 1970 1/ stressed the importance of each country developing a comprehensive and integrated system for agricultural education and training. Such a system should embrace the efforts of all ministries and institutions from university level to non-formal extension activities with out-of-school rural youth. While firmly integrated with the general education system, it must at the same time be flexible and adaptable so that it may successfully respond to the changing patterns of agricultural production and of rural society in general.

But how can we make educational institutions more development oriented? Perhaps one of the best ways, as demonstrated in the Comilla Project 2/ is to relate it to a comprehensive development programme. Those of us actively concerned with education and training who feel it to be the keystone of human development must always remember that it is in fact only one of the inputs required for agrarian development. As such, it must take its place amongst many other essential inputs including land tenure systems, price structure, processing, marketing, transportation, communications and the provision of many ancillary services.

Agriculture has universally suffered from being low in the list of educational demands. It is one thing to plan for a hierarchy of agricultural training institutions; it is quite another problem to staff the institutions with teachers who have a real desire to work in them or to find sufficient students to fill them who have a real sense of vocation and who will ultimately make an impact at the farm level.

Training of Agricultural Extension Workers

The great majority of graduates of agricultural education institutions, whether professional, technical or vocational, become employed in some form of agricultural extension. As such, they are required to teach new knowledge and skills directly to the farmers, to act as subject matter extension specialists or as extension supervisors to guide others. In all cases, it is important that the advice be given within the context of the total farm operation. Thus it needs to be not only technically and economically sound but socially acceptable. This requires personal knowledge and experience which can come only from practical farming experience - and this is perhaps the greatest single area of need in most agricultural schools and colleges. While many institutions are making laudable efforts to train their technicians in practical farming skills, these are frequently learned in isolation and are not sufficiently related to the total management of the farm and the decision-making process of the total farm family. A successful extension worker must be able to place himself in the position of peasant farmers and see things from their viewpoint. He must be fully aware of the social and economic constraints on the small farmer which are frequently more critical than lack of technical knowledge.

There are many reasons why so few agricultural graduates in developing countries have had practical farm management experience. This deficiency is probably one of the most important reasons why agriculture continues to be treated as the "Cinderella" industry in most countries of the Far East region. Policy makers and technicians alike have generally been unable to identify themselves with the peasant farm problems. And in the final analysis, it is the hundred and one decisions made in the millions of farm homes of a country which determine the success or failure of any agricultural policy. If the policy is not favourable to the majority of the decision-making farm heads, then participation in its implementation will at best be only passive.

The attitude of an agricultural extension worker towards farming in general has much greater effect on his work performance than any technical knowledge or farming skills he may have acquired. But how can agricultural schools and colleges give greater attention to attitudinal development amongst their students and teachers? Since we know that attitudes are developed more through personal experiences than through acquiring factual knowledge, it perhaps means that agricultural educators and extension administrators need to deliberately develop "favourable learning experiences in farming" for their students, teachers and currently employed extension staff. In Europe this is done by making one or more years farming experience an entrance requirement to agricultural education institutions. In North America, a very high percentage of agricultural students, by natural selection, come from family farms. In Thailand, East Malaysia and Fiji 3/, certain agricultural schools make their senior students responsible for managing small farm units for at least one crop season as part of their formal training.

The College of Agriculture of the University of the Philippines has pioneered the establishment of a "social laboratory" in a group of nearby villages as a place for students and faculty to test and apply their social science learning in education, extension, rural sociology, farm management, etc. A similar laboratory is being established by Kasetsart University in Thailand.

Training and Motivation of Agricultural Teachers

It does not necessarily follow that those who have received technical training are immediately equipped to become teachers competent to transfer their acquired knowledge and skills to the younger generation or to adult groups already traditionally experienced but lacking in technical expertise. In general education, the necessity to make proper provision for teacher training before entering the profession has been more fully appreciated and considerable resources have been devoted to it. But inadequate consideration has been given to the urgent need to train technical personnel in the art of teaching before releasing them on their students.

But however thoughtfully the organization of rural education and training carefully related to needs and demands is developed, the whole system relies for its ultimate effectiveness on the quality of its teachers. How are the teachers selected and trained, and adequately supported throughout their working lives? How are the limitations which may arise from their urban backgrounds and their lack of sympathy for rural people to be overcome? Can better standards of teacher training provide some of the answers?; if so, where are the teachers with understanding and vision to be found to train the teachers?

Agricultural teachers with practical field extension experience generally make superior teachers, particularly in the eyes of the students. However, directors of extension services are frequently reluctant to release their better staff for teaching or training assignments. Given the pressure to meet production targets at field level, this is understandable. But is it not better for extension to assume some responsibility at the outset for improving the quality of pre-service education and training in agriculture, than to be confronted with the task of re-training new recruits after they have joined the extension service. In Indonesia where agricultural education and extension are under the same ministry, a system of periodic rotation has been successfully practised for many years; although for administrative reasons extension workers are increasingly reluctant to forfeit their field allowances and take up teaching posts where supervision is more rigid and the demands of students more exacting.

Closely related to this area is the problem of the training and motivation of the primary school teachers. It is the attitude of the primary school teacher towards farming and economic development in general which influences the thinking of his (or her) students and, to a large extent, that of their parents. The importance of this has been clearly stated by a Unesco expert in Bangladesh, Mr. K. Risam, in his 1970 report:

> "What he (the primary school teacher) knows about economic development will automatically be a part of his teaching, whether he is asked to teach it or not. His whole personal attitude will be an influence for good or bad upon children, almost completely independent of syllabuses and textbooks. Nobody will be able to control him."

> "If primary school teachers were included in real development programmes and given the feeling of more actively participating in the improvement of economic standards they would be more eager to do a good job and more willing to serve devotedly in spite of the small remuneration which is all the country can afford to provide at present."

Ministries of Agriculture in Asia are becoming increasingly conscious of the need to take concrete action to counteract this negative attitude towards farming and rural life in general which is being fostered unintentionally and often unknowingly through the formal education system. To this end, delegates to the FAO Regional Conference for Asia and the Far East, held in Canberra, Australia, in September 1970, addressed the following recommendation to their own governments:

> "Agricultural ministries and departments were urged to take the initiative, with FAO assistance where possible, to plan a programme aimed at developing positive attitudes amongst teachers in rural and urban schools at all levels towards agriculture and scientific farming as a profitable and satisfying way of life."

The methods used in conducting such training are of equal or even greater importance to its success than its formal content. People tend to treat others as they themselves have been treated. Similarly, agricultural development staff tend to pass on information to other staff members and even farmers in the same manner that it was initially given to them. The problem-identification/problem-solving workshop approach to training has proved in several countries of the Far East region - Sri Lanka (Ceylon), Malaysia, Indonesia - to be one of the best methods of improving communication channels between different levels of officers and between different departments.

Agricultural Extension and Farmer Training

Teaching farmers and their wives ways and means of achieving a better level of living is traditionally the responsibility of agricultural extension conducted through non-formal methods. It is unrealistic to think in terms of training farmers in institutions, other than for periodic short courses. Even then, only a fraction of the decision-making farm family heads can be reached. Few, if any, developing countries can afford extension services which adequately cover every farm family, and fewer still could find the trained manpower to do so even if they could afford the costs. In practice, the coverage in its present form is almost invariably grossly inadequate. We need to know much more about how to make the most effective impact with very limited resources. The Comilla pattern has given new ideas to other developing countries. Another approach showing great promise is the farmer discussion group approach in India using extension workers and special farm radio programmes combined with functional literacy and short courses for progressive farmers.

Rural Youth Training

One third of the total population of Asia is estimated to be between the ages of 12 to 25 years. The great majority of these are sons and daughters of farmers or farm labourers. Few of this age have any opportunity to remain in the formal school system and many who may have become literate quickly drop back into illiteracy due to lack of practice. Yet almost all of them, through time and in the absence of alternative employment opportunities, will become future farmers or farmers' wives. It therefore behoves agricultural extension to do something for the continuing education and training of this sector, otherwise extension will constantly be burdened with the tremendous extension education problem of trying to modernise agriculture through a body of farmers which is largely stagnant and illiterate.

Educators are today in general agreement that new approaches to education and much greater use of non-formal education methods such as the practical and relatively inexpensive type of education provided through out-of-school rural youth clubs, must be found. Perhaps greater use could be made of radio in support of village-level rural youth club activities, similar to the radio support to adult farmer discussion groups in India.

There is increasing awareness by both educators and politicians of the urgent need to develop practical vocational training programmes for the critical 17 - 25 years age group. The experience of Sri Lanka and Indonesia regarding "older" rural youth training appears highly relevant. Basically the approach 4/ is to bring the agricultural teacher to the youth on their home farms instead of the traditional approach of bringing youth to the teacher and setting up artificial school farms. Thus it becomes a combination of extension work and agricultural education teaching.

The importance of developing positive attitudes towards rural life - and farming in particular - among prospective agricultural development workers during their formal education was stressed above. Based on the assumption that it is easier to develop the correct attitudes amongst students coming from farm families, it becomes important that governments should attempt to identify and assist promising sons and daughters of small farmers to acquire sufficient formal education to make them eligible for entrance to agricultural education institutions. In fact, experience in some countries indicates a justification for accepting farm youth who might not even meet the academic requirements, but who are gifted in other ways.

1/ See Report of the World Conference on Agricultural Education and Training, Volumes I and II, FAO, Rome, 1970.

2/ The Comilla Project started in East Pakistan (now Bangladesh) in 1959, with support from the Ford Foundation. An Academy for Rural Development was established at Comilla to give officers engaged in field work an insight into the social and economic problems of the villages. It has since expanded and has now a Central Cooperative Association and a large number of small village cooperatives. The "Comilla Approach" means continuous or on-the-job training for local leaders, through their cooperative organizations.

3/ See "Agricultural Education and Training - Annual Review of Selected Developments", FAO, Rome, 1971, pages 16-23.

4/ For a fuller discussion of the approach see "Extension", FAO, Rome 1971, pages 50-54 "A Non-Institution Based Approach to Vocational Agricultural Education in Asia".

NOTES AND COMMENTS

Extension Training for the Caribbean and Latin America

The FAO Agricultural Education and Training Service, in collaboration with the Latin American Regional Office, DANIDA and the Governments of Mexico, Jamaica and Chile, held three consultations on extension training in Mexico City (19-23 March); Kingston, Jamaica (2-10 April), and Santiago, Chile (14-24 April).

The participants were invited in their individual capacities from countries of the regions. In Mexico, 21 persons participated. Twenty-six were present at the Jamaica session, and 23 attended the consultation in Chile. Representatives of Unesco, ILO and IICA attended all the meetings. Participants for each consultation were chosen to represent a balanced group of experienced people working in a variety of fields related to extension, including extension workers and administrators, teachers, sociologists and economists, representatives of youth and women's programmes, and farmers.

As a follow up to the FAO/Unesco/ILO World Conference on Agricultural Education and Training held in Copenhagen, Denmark in 1970, and the FAO Conference on Rural Extension held in Chiclayo, Peru, in the same year, the objectives of the consultations was to discuss the issues and problems involved in producing more effective training for extension workers at all levels in order to relate more closely to the needs of the farmer and farm family. Another objective was to seek means involving farmers and their families more directly in the extension endeavour through farmers' organizations. The emphasis was on training relevant to farm needs, with particular attention to the training needs as seen from the farm level.

Each meeting prepared a report covering five main issues: constraints to rural extension; objectives of rural extension; mobilization for structural change; selection and training of extension workers; and a strategy for extension training. These will be published in a joint final report, together with an analytical chapter covering the main issues raised. A number of proposals were addressed to FAO and the other international agencies on the development of extension training within the region. These related particularly to the relevance of existing training, the need for greater exchange of ideas on training, the desirability of increased regional assistance in training, the need for the involvement of campesinos' and farmers' organizations in training, and requests for specific action to promote new training concepts and materials. All three consultations endorsed the importance of the Chiclayo meeting recommendations.

The consultations gave FAO the opportunity to obtain a variety of views on extension training which must be taken into account in considering future training programmes. The results of the meetings will be of great importance in the development of the future work in the region. It is also intended that the report should be given wide circulation among the governments of the region and institutions involved in extension and in extension training.

* * * * *

Technical Meeting of Rural Extension Directors from Latin America

Under the joint auspices of the Government of Spain and FAO, a Technical Meeting of Rural Extension Directors from Latin American countries was held in Madrid, Spain, from 30 April to 9 May 1973.

The general motivation and objectives of the meeting relate to a recommendation of the last session of the Conference of Directors of Extension of the OECD (London, July 1971), requesting OECD member countries to open their training facilities in rural extension to developing countries. As a result of this recommendation, the Government of Spain, through its "Dirección General de Capacitación Agraria", established with FAO and OAS, an agreement for assistance in training activities for Latin American countries which will be offered in the National Training Centre established in San Fernando de Henares, near Madrid.

The intention of this training programme is to make use of the valuable experience of the Spanish Extension Service, providing the trainees with an opportunity to observe its achievements and discuss the possibilities of adapting methods and procedures to their own countries. These being the objectives, it was considered essential to provide first a similar opportunity to the directors of extension services in Latin America. Personal experience would enable them to get the maximum benefit from the conduct of the training courses. Fourteen directors of extension services and one director of agricultural research participated in the technical meeting.

The meeting was officially opened by the Minister of Agriculture for Spain. Mr. J.F. Yriart, Assistant Director-General, Development Department, spoke in the name of FAO giving the views of the Organization regarding the need for a new approach to extension work in Latin America, and welcoming the valuable opportunity offered by the Spanish Government for training Latin American extensionists.

* * * * *

Course on the Management of Fishermen's Cooperatives

A course on the Management of Fishermen's Cooperatives was held in March 1973 at the Central Institute of Fisheries Education (CIFE), Bombay, India. It was sponsored jointly by the FAO/SIDA (Swedish International Development Authority) Cooperative Programme, by the Government of India and the International Cooperative Alliance (ICA).

One of the major difficulties encountered in the development of fishermen's cooperatives is the standard of management. Considerable efforts are therefore needed to train personnel of fishermen's cooperatives in modern management techniques. FAO has been planning for a number of years to organize fishermen's cooperative courses and was therefore gratified to receive funding from SIDA and the agreement of the Indian Government to host a course for the Southeast Asian region.

Thirty-one participants, mostly from India but also from Hong Kong, Indonesia, Korea, Malaysia, Philippines, Sri Lanka and Thailand, attended the course. All were managers of fishermen's cooperatives or representatives of government institutions dealing with the promotion of fishermen's cooperatives.

The syllabus of the course fell into five parts:

I. Discussions on the situation facing management, based on material written by participants, followed by lectures on main features of cooperative organization; principles of management; problems facing managers of fishermen's cooperatives in relation to their environment (especially government and private business).

II. Management techniques: accounting; cost accounting; budgeting.

III. Areas of management: marketing; production, supply; financial management; personnel development. These studies were drawn mainly from India to illustrate how modernization in various areas of management can contribute to operational efficiency.

IV. Functions of management: planning, organizing, directing, controlling, evaluating. Demonstration of how a manager can contribute to the efficiency of a cooperative by various techniques and tools of management.

V. Planning investment and techniques such as cost-benefit analysis, bankable projects, etc.

Discussions with the Indian officials resulted in agreement to consider following up the course with similar courses. However these would not be exclusively for fishermen's cooperatives, and would last longer, about 6 months. Subjects to be included would be commercial law and the practice of small enterprises. Trainees would be drawn from government institutions, small enterprises, fishermen's cooperatives and advanced artisanal fishermen. The ultimate aim would be to create a department in the Central Institute of Fisheries Education with permanent courses to train managers of fishing enterprises in India.

The full report of the proceedings is available on application to the Fisheries Department, FAO, Rome.

* * * * *

Country Profile Studies

The Human Resources and Institutions Division of FAO is conducting a series of coordinated comprehensive studies at the country level. These are concerned primarily with trained manpower needs for the agricultural sector and have two principal objectives: first, to provide countries with a comprehensive analysis of their systems of agricultural institutions and services, and to assess the implications for trained manpower needs and for educational planning; secondly, by working through national institutions to stimulate a continuing interest and activity in the agricultural side of manpower and educational planning and methodology.

With the increasing concern over "the employment problem" in many developing countries, and with the emphasis on employment creation and income generation in rural areas, manpower and educational planning, and evaluation for the agricultural sector, acquire even greater importance.

Each country study comprises four main parts, namely:

I. A basic manpower profile study, designed to give as complete a picture as possible of the existing numbers and types of trained agricultural personnel at present employed in each of all the various services being provided to the agricultural community, from whatever source these services are provided - be it government, quasi-government, commercial or private - and related to population, farming systems and administrative structures.

II. A review and evaluation of the formal system of agricultural education and training supplying trained personnel for the country; this study will cover all relevant subject-matter fields, including education and training in forestry, fisheries, home economics and veterinary science, as well as agriculture, animal husbandry, etc.

III. A review and evaluation of the non-formal systems of agricultural education and training, i.e. the extension and related services, which operate within all or part of the area of the profile study.

IV. Appropriate recommendations for strengthening and developing agricultural education and services, and giving forward projections of trained manpower needs for the agricultural sector. (This will apply where the country requests it).

FAO's role in these studies is essentially that of catalyst and consultant, the resources generally being provided by the national authorities. Two studies have already been embarked upon in Nigeria and the Lebanon.

* * * * *

National Studies and Seminars on the Rural Extension Services of Paraguay, Ecuador and Argentina

In 1970, FAO and the Socio-Economic Institute for Agricultural Development of the Technical University of Berlin agreed jointly to sponsor an "Analytical Study of the Rural Extension Services of Argentina, Ecuador and Paraguay". The field work for this study took place in 1971, followed by the processing and interpretation of the information collected and the forwarding of the final report to the three governments.

In order to consider the analytical study report in depth and determine an appropriate action programme, FAO organized a national seminar in Asunción, Paraguay (12-16 March 1973), and in Quito, Ecuador (19-24 March 1973). The seminar in Argentina will be held at a later date. Both seminars received technical assistance from FAO, the Technical University of Berlin, the German Foundation for Developing Countries and the Spanish Agricultural Training Service.

Participants included policy-level officials of the Rural Extension Services in the Ministry of Agriculture and representatives of national institutions involved in rural agricultural development.

Participants made conclusions and recommendations for a more efficient participation by rural extension services in the development of the agricultural sector. It is hoped that the results of the study and the national seminars will help to improve and increase the effectiveness and coordination of the basic functions that compose the agricultural policy of both countries.

Copies of the recommendations (in Spanish) are available from the Agricultural Education and Training Service, FAO Headquarters, Rome.

* * * * *

Agri-Missio Conferences

A series of three short conferences were held at FAO Headquarters in May 1973, organized by Agri-Missio (a service to promote collaboration between missionaries in the field and FAO) to discuss the work of INADES (Abidjan). The conferences covered Africa, the Asian region and Latin America respectively. Lively discussions took place concerning the promotional work undertaken by INADES through its active and valuable publication activities and correspondence courses. The possibility of extending its coverage through translations and adaptations for other regions of the world was fully considered. The series "Cours d'Apprentissage Agricole" have already been translated and adapted in English and Arabic by FAO (The Better Farming Series), and by national authorities in several other languages. These basic texts in the field of agriculture are evidently widely appreciated in teaching and extension work, and it is hoped that these conferences will result in their wider dissemination.

* * * * *

Action for Development

FAO's Action for Development (formerly the Freedom from Hunger Campaign) is a programme of study, research, discussion and action that aims at a wider and deeper understanding of the fundamental causes of under-development. It is above all concerned with promoting initiatives that allow people to draw their own conclusions and make their own response to their development problems.

In the industrialized countries the emphasis is on development education that seeks to create the political will needed to change the present relationships between these countries and the rest of the world.

In Africa, Asia and Latin America, Action for Development concentrates on encouraging greater use of existing resources within the local community and on stimulating an awareness among rural people of the need to change society and of the role that they can play in that change. In particular, it has been exploring innovations in formal and non-formal education which offer alternative learning opportunities more closely related to the needs and possibilities of the individual within his community.

To cite a few examples of recent activities organized by Action for Development:

- a study-action programme on local volunteers in Africa;
- a survey on rural development activities in the Caribbean;
- an experiment in community action through "self-diagnosis" in Chile and a community planning exercise in Argentina;
- a workshop for young action groups in India;
- a survey on the attitudes of European industrial workers towards the Third World;
- a seminar on "youth and rural development" in Niger and Upper Volta;
- a comparative study of textbooks and teaching methods of development education (with Unesco).

Some of the new ideas, methodology and evaluation techniques emerging from these dialogues are featured in Ideas and Action, an illustrated bulletin published nine times yearly by FAO. Copies may be obtained (in English, French and Spanish) on application to the Coordinator, Action for Development, FAO, 00100 Rome.

* * * * *

Note on Agricultural Science Teaching: Student Experiences Involving Weighing

Practical exercises in agricultural science at all levels necessarily include laboratory experiences in which weighing is involved. These experiences are vital to the development of quantitative concepts in relation to plant and animal growth. However, the time taken by weighing experiments, the skill required to achieve reasonable accuracy and the cost of balances can be major constraints. Using a conventional school balance, an inexperienced student can easily take 20 minutes for each weighing, so that in a typical simple experiment with three weighings (empty container, container with original sample and container with treated sample), for which a double class period of 1½ to 2 hours is allocated, little time is left for the actual treatment of the sample, although this is the main point of the exercise. Also, the inaccuracies of the weighings frequently produce a result which obscures the point it is intended to illustrate.

The development in recent years of robust, single-pan, top-loading balances with quick visual reading, at reasonable prices, should make it possible to minimise both time and error in weighing and thereby permit more emphasis on the agricultural aspects of quantitative work. For instance, a top-loading balance with torsion strip suspension and oil damping, with a maximum load of 400g, can be used to make 2 to 3 weighings per minute (say one per minute for an average agricultural science class). Direct readings are given on a clearly visible dial, to the nearest 0.01g. One such machine could replace 15 standard beam balances and cut each student's weighing time in an experiment containing three weighings, from about 30 minutes to 3 minutes. Another advantage of these new balances is that they are robust, require no special mounting and read true even when out of level.

For levels of agricultural education which require more accurate experimentation, there are balances just as speedy and convenient but, having knife-edge mechanisms, require more careful handling.

Each of these types of balance costs approx. US $400 to US $450 (considerably less than 15 beam balances) and both may be used open in the laboratory, thus eliminating the need for a separate balance room. Any regular equipment supplier will be able to send details.

The counter-argument that conventional weighing exercises help students to develop sensitive manipulative skills is irrelevant, because most agriculture students have no further use for such fine skills. Those that branch off into laboratory research can acquire the relevant skills as they need them.

(P.G.B.)

* * * * *

Rural Broadcasting in Dahomey
June 1968 - June 1973

The purpose of the UNDP project was to advise the Government on and then to set up daily broadcasts for farmers and establish radio listening clubs all over the country to foster group listening. These radio clubs were to be the starting point for self-help in the villages, on the basis that group discussion of programmes heard would lead to decision and action. In addition, the formation of groups of farmers reached by radio would facilitate a two-way communication between the government and the agricultural community.

In less than five years, results include the following;

(a) Daily broadcasts in 10 different vernaculars, a total of 8 hours 45 minutes a day.

(b) Some 700 radio clubs established. It is hoped to reach 1,000 by the end of 1973. Members of these clubs gather to listen to programmes, discuss them, make their comments and formulate questions, etc.

(c) Surveys show that the rural broadcasting service has already brought about noticeable changes in the attitudes of many farmers resulting in such initiatives as crop diversification, adoption of improved agricultural practices and storage methods, better nutrition and hygiene, the digging of wells, construction of roads, etc. Clearly the efforts of the extension workers have been considerably reinforced by the broadcasts.

(d) National radio club contests organised in 1970 and 1972, called "Operation Progrès", and the initiatives taken in the winning village of Adadahoué, are indicative of the manner in which the radio programmes have mobilised the people to action. Adadahoué's 45 able-bodied adults (out of a total population of 200) have built a cultural centre of brick to house the local radio club; they have collectively bought 40 head of cattle and opened up 5 hectares for them; they have built two silos and they have planted four hectares of cotton, two hectares of maize and put in 2,000 pineapple plants; they have also built a school, a maize drier and a rice husker.

(e) On the infrastructural side, a national broadcasting committee has been set up, assisted by six provincial committees, which coordinates the preparation of rural programmes in close cooperation with the technical services at the field and village levels. These committees are composed of representatives of the Ministries of Agriculture, Health, Education and Finance, and Labour and Planning. Also represented on the committees are bilateral technical assistance groups, as well as representatives of the various specialized agencies working in Dahomey.

(f) A measure of the high government regard for the rural broadcasting service is that it has now been formally established within Radio du Dahomey by a law decree of May 1970. It has a permanent staff of two broadcasters, 10 vernacular adapters and one radio technician.

(g) The National Audio-Visual Centre in Porto Novo (Caviep) established about ten years ago but virtually inactive since 1967 has begun production of audio-visual material in support of the radio clubs. It is now regularly issuing wall charts, posters, etc., for distribution to them. Its reactivation seems to have come about largely under the impetus of rural broadcasting.

(h) The success of the project has now given rise to an initiative for a much larger rural communication and extension project for possible financing by IBRD. It is considered that the efforts of the FAO expert, Paul Daniel, have laid a solid foundation upon which an investment by the Bank would have a good chance of transforming rural life through intensified communication and extension activities. The proposal is now being submitted for IBRD's field study.

* * * * *

REPORTS AND PUBLICATIONS

Education and Training Index

"The Education and Training Index"produced by FAO's Agricultural Education and Training Service in close collaboration with the FAO Documentation Centre, is now available. The Index contains 1,272 selected references to documents originated by FAO on agricultural education and training produced between 1966 and 1972.

Copies are available on request to the Distribution and Sales Section, FAO, Rome, at a price of $4.00.

The Human Environment

FAO has issued"The Human Environment, A Selected Bibliography on its Ecology, Resources, Deterioration and Conservation", as one in a series of the FAO Library Occasional Bibliographies. Issued in January 1973, the topics include: Bibliographies and Serials; Ecology; Environment; Natural Resources and the Earth Sciences; Pollution and Pollution Control; and Wildlife. An authors' index is also included. The Bibliography (No.6/1973) may be obtained from the FAO Library, Bibliography Unit, FAO, Rome, Italy.

Agricultural Extension - A Reference Manual

The publication "Agricultural Extension - A Reference Manual" (336 pages) is available from the Agricultural Education and Training Service, Human Resources and Institutions Division, FAO, Rome, Italy. The author-editor of the manual is Addison H. Maunder. There are sections on: The Definition of Extension; Extension Programmes; Extension Teaching; Extension Administration and Operation, and International Cooperation and Relations. An extensive bibliography and selected reading list is included.

Njala University College,
Sierra Leone

The Agricultural Education and Training Service of FAO was recently invited to evaluate the work of Njala University College, Sierra Leone and to make appropriate recommendations for improvements regarding teaching and research programmes, institutional structure, staff development, physical facilities, etc.

A report has been published by FAO, Rome, Italy (Ref. MR/D7884).

Adult Education for Farmers

A thought-provoking book entitled "Adult Education for Farmers in a Developing Society" has recently been published. The author, J.C. Mathur, who has shared his working life to date between adult education, and agricultural administration and extension, displays eminent qualifications to deal with his subject. "...The (green) revolution in agriculture" he says "cannot be sustained over a long period in the absence of an institutional framework...how is such an institutional framework to develop?...one answer may well be adult education".

Traditionally, in the western world, the term "adult education" has few economic or practical connotations; rather has it been associated with "enlightenment". The author sees adult education in a much wider context incorporating the notion of life-long education. "I am convinced" he says "that both the adult educator and the agricultural and extension expert need to have some reorientation..." "This book may facilitate that and be a starting point of a process of mutual education and understanding."

Some idea of the range of the book is given by the chapter headings: Adult Education for Farmers in the Green Revolution; Implications of the New Approach; Methodology or Androgogics of Farmer's Training; Functional Literacy - Its Uses and Definition; Informing and Communicating with Farmers; Mass Media as an Aid to Literacy; Trainers and their Training; Women Farmers and Young Farmers; Role of Research and Universities; A World University for Farmers; The Role of Voluntary Organizations; and Growth of Farmers' Education in India.

This publication may be obtained from the Indian Adult Education Association, 17-B Indraprastha Marg, New Delhi, India. Price $5.00.

Seminar in Applied Communication

"The Story of a Seminar in Applied Communication" has been issued by the Dag Hammarskjöld Foundation, Uppsala, Sweden. It is a comprehensive report of a seminar held in Sweden in 1972. Many of the participants were from African countries. There is a full evaluation of the proceedings and the report is well illustrated, as befits a publication on communication. The report is edited by Andreas Fuglesang, Communication Adviser to the Ethiopian Nutrition Institute.

FAO Expert Consultation on
Fishery Education and Training

A report of the above activity which took place in FAO Headquarters in November 1972 is available. (Ref. MR/D4554).

Planning Family Resources for
Rural Development

A report of the conference held in Addis Ababa in March 1972 on Planning Family Resources for Rural Development is now published. (Nutrition Information Documents Series 4, FAO, Rome).

Third International Conference on
Adult Education

The final report of the Third International Conference on Adult Education convened by Unesco in Tokyo in 1972 is now available.

In drawing attention to the relationship between adult education and rural development, the report notes that "...not least for the sake of nation-building and economic development the provision of adult education for the often underprivileged rural communities of many countries was a top priority...far more educational resources should be channelled into the development of the rich and largely untapped human resources of rural communities, especially in the Third World...the subsistence farmer and the landless agricultural worker, today often a victim of forces around him that he did not understand and felt he could not influence, should learn to understand and positively to influence his environment".

The conference noted the close relationship between adult education for rural development and the need in many parts of the world for land reform and radical changes in the socio-economic sectors of the rural areas. Copies of the report may be obtained from Unesco, Place de Fontenoy, 75 Paris 7e, France.

Non-Formal Education for Rural Development

Two comprehensive reports on the above subject have been compiled by the International Council for Educational Development (P.O. Box 217, Essex, Conn. 06246, U.S.A.).

The first, prepared for the World Bank, is sub-titled "Programs related to Employment and Productivity" (draft final report). The second, prepared for UNICEF (an interim report), is on "Strengthening Learning Opportunities for Children and Youth".

Regional Meeting of the Association of
African Agricultural Faculties and Colleges

The FAO Agricultural Education and Training Service was represented by an observer at the above meeting held in Nairobi in July 1973. A full report is in preparation.

FAO Film Loan and Film Strip Catalogues

FAO has issued a new Film Loan Catalogue which contains descriptions of films listed in both the 1968 edition and the 1970 supplement, and combines these with an additional 280 films. The films are circulated on free loan and are intended for use as educational training material in support of agricultural field projects or as general information on activities concerned with international development.

The films listed are available from FAO for periods up to two weeks, not including transport time.

The Division of Public Information has also issued an annotated list of film strips available. These publications are available from Distribution and Sales Section, FAO, Rome, Italy.